

1950 Index to **WORLD OIL**

(Established 1916 as The Oil Weekly)

January-December 1950

WEST ENGIN.
LIBRARY
TN
860
043

(Vol. 130, No. 1 through Vol. 131, No. 7)

Special Issues

Review-Forecast	Feb. 15
Exploration	April
Gulf Coast	June
International Operations	July 15
West Texas-New Mexico	Sept.
Pipe Line	Nov.
Canadian	Dec.

Regular Monthly Features

Advertisers' Index
Associations
Changing Panorama
Letters to the Editor
Equipment and Service Suppliers Notes
Men in the Industry News
New Books
New Equipment
New Literature
The Oil Man's Calendar
Squeaks from the Bull Wheel
Trading Post

SUBJECTS COVERED IN INDEX

	Page
Current Outlook and News Analysis	1
Exploration	3
Drilling	3
Drilling Hints	5
Production	5
Production Hints	7
Pipe Line	7
Pipe Line Hints	8
International	8
Authors' Index	11

CURRENT OUTLOOK AND NEWS ANALYSIS

Publisher's Page

Oh Lord, I am Thankful	Jan.	21
Ray L. Dudley		
Can a Pension Be a Racket	Feb. 1	21
Ray L. Dudley		
What This Issue Cost	Feb. 15	23
Ray L. Dudley		
Paul Peebles Returns as Politician	June	21
Ray L. Dudley		

Editor's Page

How Much Is Too Much?	Mar.	21
Warren L. Baker		
Depletion Allowance	Mar.	21
Warren L. Baker		
Taxation and Stagnation	Apr.	21
Warren L. Baker		
Don't Expect Joe To Do It	May	21
Warren L. Baker		
Suspicious Multiply	July 1	21
Warren L. Baker		
The People Responsible	July 1	21
Warren L. Baker		
Complacency Isn't Good	Aug.	37
Warren L. Baker		
Oil Supply Depends on Steel	Sept.	39
Warren L. Baker		
Mobilize Managerial Skill	Oct.	37
Warren L. Baker		
End-Use Control Is Dictatorship	Nov.	39
Warren L. Baker		
Public Relations Program Pays	Dec.	37
Warren L. Baker		

The Changing Panorama

Railroads Important Oil Product Buyers	Jan.	25
Industry Should Have Interest in Highways	Jan.	25
Oil-Gas Leases Cover Tenth of U. S. Lands	Jan.	25
Depletion Allowance Under New Attack	Jan.	25
Drilling To Stay At 1949 Level	Feb. 1	25
Better Record Shows Safety Efforts Pay	Feb. 1	25
The Changing Panorama 1949-1950—Warren L. Baker	Feb. 15	25
From Public Power To Socialized Oil	Mar.	25
Government Oil From Alaska and Tidelands	Mar.	25
Residual and Coal Versus Diesel Oil	Mar.	25
Investigations Waste Money	Apr.	25
Synthetic Oils Not Needed for Decade	Apr.	25
Natural Gas Act Change Is Needed	Apr.	25
Kerr-Harris Bill Veto—L. J. Logan	May	23
Bureaucracy Versus Business—Warren L. Baker	June	23
Industry Needs More Heating Oil Storage	June	23

"Tax Teller Coin" To Show Gasoline Cheap	July 1	23
Double XX's Litter Trail of Mr. Truman	July 1	23
End of Co-op's Tax Advantage Foreseen	July 1	23
In Fighting Communism Abroad Let Us Not Embrace It At Home—L. J. Logan	Aug.	39
U. S. Production To Be 85.5 Percent of Capacity	Sept.	41
Rocky Mountain Line Significant To U. S.	Oct.	39
Coal Spokesman Warns of Bargaining Pitfalls	Oct.	39
Oil Industry's Progress Is Agriculture's Gain	Oct.	39
Conditions Healthy for Drilling Contracting	Nov.	41
Phillips Case Is Fight for Entire Industry	Nov.	41
Oil Earnings Plow-back Subject for Publicity	Dec.	39
Oil Men's Influence on Defense Plans Needed	Dec.	39

News Analysis

Operations in 1949 Nearly Equal Records Set in 1948	Jan.	26
Refiners Organize to Seek Improvement in Situation	Jan.	26
California Situation Helped by Seasonal Fuel Oil Demand	Jan.	28
Canadian Discoveries Cause Search for Oil in Dakotas	Jan.	28
ECA Disapproves Projects Threatening Unfair Trade	Jan.	28
Public Acceptance Sought for Offshore Shooting	Jan.	28
Increase in Automobiles to Boost Use of Gasoline	Jan.	30
Oil and Related Industries of Vast Importance to U. S.	Jan.	30
Studies Show Possibilities for Producing Synthetic Oils	Jan.	30
Imports Reduction Likely as Lawmakers Prepare for Action	Feb. 1	27
Sun Refutes Federal Charges of Anti-Trust Violation	Feb. 1	28
Reversed Stand on Depletion Will Bring Strong Opposition	Feb. 1	30
Outlook More Favorable for Demand in 1950, Says Bureau	Feb. 1	30
Supreme Court Ruling Creates Extended Authority for FPC	Feb. 1	30
Reserve Productive Capacity of Nation Relatively Large	Mar.	26
Large Texas Potential Makes Output Proration Difficult	Mar.	26
Texas Allowable Is Reduced; Basis for Quota Changed	Mar.	26
Overcrowded Storage Forces Louisiana Allowables Lower	Mar.	26
Overproducers in Oklahoma Commit Industry Hara-Kari	Mar.	28
Outlook Dim for California Oil Conservation Legislation	Mar.	28
Congressional Study Likely as Imports Reach New Highs	Mar.	28
Congress Considering Bills Concerned with Natural Gas	Mar.	28
State Corporation Commission May Set Gas Price at Wellhead	Mar.	30
Crude Prices to Remain Stable, Analyst Predicts	Mar.	30
Shaky Price Structure May Be Major Problems in 1950	Apr.	26
Texas Allowable Increased by 130,376 Barrels Daily	Apr.	26
Special Session May Act on California Conservation Bill	Apr.	26
Proposed Import Compromise Would Need No Legislation	Apr.	28
Natural Gas to Be Available Soon in All Sections of U. S.	Apr.	28
Vacation Travel This Year to Stimulate Gasoline Use	Apr.	30
California Heavy Fuel Stocks Down Slightly from Last Year	Apr.	30
Bureau Figures on Cost of Synthetics Are Challenged	Apr.	30

CURRENT OUTLOOK

Increase in Federal Aid for Highways Is Opposed.....	Apr.	30
Government Lending Poses Threat of Nationalization....	May	28
Tide Water President Advises Cautious Policy in Industry..	May	28
Quitclaim to Tidelands Not Likely During This Session....	May	28
Legislation Pushed to Hike Tariff on Imported Oil.....	May	28
California Conservation Law Not Expected This Season..	May	30
Conditions for Deduction of Exploration Costs Outlined....	May	30
Maritime Group Considering U. S. Aid in Tanker Building..	May	31
U. S. Has 13 Million Users of Gas, FPC Report Sets Forth..	May	31
Bargaining Basis Big Issue in Texas Company Strike.....	May	31
Higher Allowables for June Reflect Improving Demand....	June	28
Oil Control Efforts Feared Following Veto of Kerr Bill....	June	28
National Interest Shown in Problem of High Oil Imports..	June	30
California Anti-Trust Suit May Hasten State Proration....	June	32
Industry Outlook Favorable; Earnings Show Improvement	July 1	28
All Large U. S. Cities Due to Get Natural Gas by 1954....	July 1	28
Oil Industry Is Object of Attacks and Investigations.....	July 1	28
Active Interest Is Shown in Oil Possibilities of Nevada..	July 1	30
Industry Profits Help Provide Nation's High Living Standard	July 1	30
Oil Worker Is Three Times Safer on Job Than at Home..	July 1	30
Role of Imports in Meeting Need for Residual Explained..	July 1	32
Development of Tidelands Unsettled After Decision.....	July 1	32
Industry Is Cooperating With Government on War Problems	Aug.	44
Government Interference in Pricing Not Good for Public..	Aug.	44
Gas Industry Investment Due to Be \$11 Billion by 1955....	Aug.	48
Recent Developments Reduce Clamor for Curbing Imports..	Aug.	48
\$30.2 Billion Oil Industry Is Fourth Largest in U. S.....	Aug.	50
More Motor Vehicles Cause Sharp Gain in Tax Revenues..	Aug.	50
Imports Clamor Stilled	Sept.	47
NPC Advisors Appointed	Sept.	47
Renegotiation Feared	Sept.	47
Industry Must Be Free	Sept.	48
Federal-State Dispute Slows Continental Shelf Development	Sept.	48
Earnings Outlook Good	Sept.	50
Oil, the Farmer's Ally	Sept.	50
Industry Able to Meet Needs in Major Conflict.....	Oct.	45
Interior Receives Broad Powers Under New Act.....	Oct.	45
Distillate Fuel Oil Supply Enough for Winter Ahead.....	Oct.	47
Heavy Producing Wells in California Re-opened.....	Oct.	47
Industry's 1950 Earnings May Exceed Last Years.....	Oct.	47
Independents Continue Campaign Against FPC.....	Oct.	47
Registration of Vehicles to Make 8.5 Percent Gain.....	Oct.	48
IPAA Group to Consider Oil Field Pipe Scarcity.....	Oct.	48
Senate Finance Leader Promises Tax on Co-ops.....	Oct.	48
Temporary Tidelands Settlement Delayed.....	Oct.	48
U. S. Loan Is Indirect Aid to Mexican Petroleum.....	Oct.	48
Crude Stocks Adequate for Fall and Winter Seasons....	Nov.	46
West Coast Hard Pressed to Meet Abnormal Demand....	Nov.	46
Texas to Continue Fight for Tidelands Rights.....	Nov.	48
Military Needs Contribute to Rising Tanker Rates.....	Nov.	48
More Mileage Per Gallon Promised from New Engine....	Nov.	48
Chapman Says PAD Seeks Adequate Steel for Oil.....	Nov.	44
Porter Asks Understanding by Public and Government....	Nov.	44
Legislation Would Restrict Oil Industry's Freedom....	Dec.	46
FPC Threat Discourages Sale of Oil, Gas Lands.....	Dec.	46
Jones, Porter Re-elected to Chief Offices in API.....	Dec.	48
Industry Earnings for 1950 Show Gain Over Last Year....	Dec.	48
California Ups Production and Halts Withdrawals.....	Dec.	48
Government May Reject Gas Administration for Defense..	Dec.	48
Report From the Observatory		
Ray L. Dudley—Warren L. Baker		
Industry Can Improve Position.....	Jan.	22
Gasoline Oversupply Only Disturbing Factor in Industry's Present Outlook.....	Feb. 1	22
International Complications Darken Present Oil Outlook..	Mar.	22
Stocks Improve But Markets Weaken.....	Apr.	22
Industry's Outlook Improved.....	May	25
Outlook Best in Two Years.....	June	24
Prospects Continue to Improve.....	July 1	24
Greater Production Necessary.....	Aug.	40
Peak Operations Lie Ahead.....	Sept.	42
Oil's Winter Position Strong.....	Oct.	40
Slower Consumption Growth Likely.....	Nov.	42
Supply-Demand in Favorable Balance.....	Dec.	41
Petroleum Trends		
Cecil W. Smith		
November Production Gains for Fourth Straight Month..	Jan.	32
December Refining Hike Improves Crude Stocks.....	Feb. 1	32
January Gasoline Stocks Near March, 1949, Level.....	Mar.	32
Rise in Gasoline Stocks Slowed During February.....	Apr.	32
Petroleum Trends—Charts and Tables.....	May	26
Petroleum Trends—Charts and Tables.....	June	26
Petroleum Trends—Charts and Tables.....	July 1	26
Petroleum Trends—Charts and Tables.....	Aug.	42
Petroleum Trends—Charts and Tables.....	Sept.	44
Petroleum Trends in the U. S.....	Oct.	42
Petroleum Trends in the U. S.....	Nov.	44
Petroleum Trends in the U. S.....	Dec.	42
Completions		
Completions Almost Equal 1948 Record.....	Jan.	34
Completions Fall Below 1949 Record.....	Feb. 1	34
1949 Wells Completions Fewer Than in 1948, But Footage at New Peak.....	Feb. 15	80
Completions Top 1949 Period.....	Mar.	34
Completions Drop in February.....	Apr.	54
Completions Climb in March.....	May	34
Completions Hold Lead Over 1949.....	June	34
Completions Increase Sharply in May.....	July 1	34
Completions At All-Time Peak Rate.....	Aug.	55
Completions Total Record 34,422.....	Sept.	52
Completions Again Set Record.....	Oct.	50
Completions Record Virtually Certain.....	Nov.	68
Completions Set Record in October.....	Dec.	50

Antitrust Suit

Antitrust Suit Victory for Government Would Endanger West Coast Operations.....	Nov.	58
T. S. Petersen		

Companies

Larger Companies Produce 62 Percent and Refine 86 Percent of U. S. Oil.....	June	44
---	------	----

Competition

Petroleum Defense Agency is Designed to Protect Industry's Free Competition	Nov.	59
J. R. Parten		

Conservation

A Uniform Plan for Applying Oil Conservation Laws Within a State.....	Feb. 1	42
Park J. Jones		
A Uniform Plan for Applying Gas Conservation Laws Within a State.....	June	45
Park J. Jones		

Costs

Planned Oil Field Building to Reduce Costs.....	Oct.	57
George Vernon Russell		

Deep Tests

Record Shows Poor Payout Below 12,000 Feet.....	Mar.	48
Raymond D. Shrewsbury		

Demand

Petroleum Demand to Show Increase in 1950.....	Feb. 15	28
L. J. Logan		
Outlook for Demand Brighter.....	May	39
L. J. Logan		
Satisfactory Half Year Results from Peak Demand.....	Aug.	60
L. J. Logan		
Oil Demand Rising Less Sharply.....	Nov.	70
L. J. Logan—C. W. Smith		

Depletion

Percentage Depletion	Mar.	40
Robert Tully		

Economics

An Independent Looks at Today's Oil Economy.....	Dec.	55
Col. T. H. Barton		

Education

The Junior College Graduates Oil Technicians.....	Nov.	60
John O. Nigra		
Spare-Time Courses Benefit Employes and Company.....	Nov.	65
Arthur F. Grant		

Financial

Financing Oil Properties	Feb. 1	52
Fred F. Florence		
Oil Now \$32 Billion Industry.....	Dec.	56
L. J. Logan		

Free Enterprise

Free Enterprise System in Danger.....	June	40
Robert G. Dunlop		
API Public Relations Program Sells Free Enterprise System	Oct.	55
John M. Lovejoy		

Government Agencies

PAD Setup Is Victory for Industry.....	Nov.	57
Petroleum Defense Agency Is Designed to Protect Industry's Free Competition	Nov.	59
J. R. Parten		

Gulf Coast

56 Years of Gulf Coast Oil.....	June	58
J. E. Kastrop		
Gulf Coast Oil Fields.....	June	60
Cecil W. Smith		

Heating Oil

Heating Oil Use to Grow Despite Natural Gas.....	July 1	54
Henry Ozanne		

Helium

Helium . . . and Its Uses.....	Dec.	64
R. A. Cattel—H. P. Wheeler, Jr.		

Imports

U. S. Becomes Larger Net Importer in Foreign Oil Trade	Feb. 15	40
Compromise on Import Essential.....	July 1	40
L. J. Logan		

Insurance

Oil Industry Insurance Problems.....	Jan.	46
James H. Johnson		

Job Evaluation

Job Evaluation—1950 Model.....	May	45
James H. Westbrook		

Leases

Observations on Oil and Gas Leases.....	Jan.	48
Verne E. Robinson		

Legislative Outlook

Depletion Allowance, Imports Are Major Items in Legislative Outlook	Feb. 15	52
---	---------	----

Natural Gas	
Curbing Texas Gas Exports Is Unsound Proposal.....Jan.	40
L. J. Logan—J. E. Kastrop	
Natural Gas Sales to Hold Down Oil Use.....May	50
Albert J. McIntosh	
Expanding Markets Increase Value of Natural Gas Reserves.....Aug.	63
Keith W. Johnson	
Condemnation of Depleted Reservoirs for Gas Storage.....Oct.	65
Burns H. Erbebo	
Underground Storage of Natural Gas in the Appalachian Area.....Dec.	60
H. J. Wagner	
Oil Field Building	
Planned Oil Field Building to Reduce Costs.....Oct.	57
George Vernon Russell	
Permian Basin	
Permian Basin Symbolic of American Enterprise.....Sept.	57
L. J. Logan	
Deeper Pays Provide More Sweet Crude in Permian Basin.....Sept.	60
L. J. Logan—Cecil W. Smith	
Permian Basin Dominates U. S. Drilling Activity.....Sept.	72
Cecil W. Smith	
Prices	
Petroleum Prices Stable After Drop from Postwar Peaks.....Feb. 15	44
Reefs	
Scurry County Stimulates Search for Reefs.....Apr.	40
W. W. Osborn	
Prospective Pennsylvanian Reef and Non-Reef Areas of West Texas.....Sept.	73
J. H. Bartley—B. R. Haigh	
Reserves	
Reserves at New Highs.....Apr.	48
L. J. Logan	
Stocks	
Industry Needs More Storage Capacity.....Feb. 1	40
Oil Stocks Satisfactory as Year Begins.....Feb. 15	48
Stripper Well	
West Virginia Faces Serious Stripper Problems.....Jan.	54
J. E. Billingsley	
Taxation	
When Government SPENDS John Citizen Pays.....May	41
Texas Allowables	
Texas May Allowables Likely to Be Fixed by Current Plan.....Apr.	34
Tidelands	
Tidelands Decision Imperils States Rights.....July 1	44
Hines H. Baker	
Trade	
U. S.-Mexico Agreement to End.....July 1	41
International Trade Is Vital to U. S. Oil Economy.....Aug.	53
B. Brewster Jennings	
Salt Water Problem	
Salt Water Problem in Texas.....Feb. 1	58
William O. George	
Work Simplification	
Work Simplification Procedure.....June	52
J. R. Fredenberger	

EXPLORATION

Alabama	
Oil and Gas Prospects in Alabama.....July 1	57
Dr. Walter B. Jones	
Anadarko Basin	
The Elk City Pool.....June	123
Dr. W. L. Wilgus	
Colorado	
Oak Creek Discovery.....Jan.	65
Gilbert M. Wilson	
Depth	
How Deep Oil or Gas May Be Expected.....May	57
James S. Cloninger	
Electronics	
Electronics Applied to Oil Exploration.....July 1	72
B. M. Balter	
Exploration	
Exploration Sets Record in 1949.....Feb. 1	74
Exploration Highly Successful in January.....Mar.	77
Exploration Continues Brisk Pace.....Apr.	93
Exploration Leads 1949 Period.....May	73
Cecil W. Smith	
Exploration Declines in April.....June	142
Exploration in May Tops Previous Records.....July 1	79
Exploration Continues High in June.....Aug.	90
Exploration for July at New High.....Sept.	102
Exploration Up to 11.9 Percent over 1949.....Oct.	92
Exploration Up to 13.3 Percent for Year.....Nov.	94
Exploration Leads 1949 Period 16 Percent.....Dec.	93
General	
3.7 Percent Increase Made in Exploratory Drilling.....Feb. 15	57
AAPG, SEPM, SEG—4000 Expected at Joint Session.....Apr.	98
Explosives	
Explosives for Seismograph Prospecting.....Dec.	73
Lawrence W. Braniff	

Geological	
A Cross-Section Board.....Jan.	69
B. Osborne Prescott	
Bacterial Activities and the Origin of Oil.....June	128
Dr. Claude E. Zobell	
Internal Structures of Shoestring Sands.....July 1	66
Oren F. Evans	
Sholem Alechem Pool Presents Complex Geological Picture.....Feb. 1	61
H. R. Billingsley	
"Strat Trap" Search Need Shown by Wyoming Basin.....Nov.	75
Henry Carter Rea	
Geophysical	
Benefits Derived from Cooperative Well Velocity Surveys.....Nov.	81
John Daly	
Geophysics	
Radio Wave Prospecting For Structure.....Nov.	92
R. Mann—E. Schmidt	
Kansas	
Lithologic Criteria of Arbuckle in Western Kansas.....Dec.	83
Oil Prospects in Eastern Kansas.....May	84
Dr. John Mark Jewett	
Mapping Techniques	
Airborne Magnetic Survey Checks with Geologic Features.....Mar.	66
Modern Mapping Methods.....Mar.	69
Minerals	
Surface Minerals Reflect Subsurface Structure in New Exploration Technique.....Oct.	73
Bernard H. Lasky	
Oklahoma	
Sholem Alechem Pool Presents Complex Geological Picture.....Feb. 1	60
H. R. Billingsley	
The Ardmore Basin—Geology and Oil Possibilities.....Mar.	57
Earl T. Peterson	
Ringwood Proves Major Oklahoma Strike.....Dec.	77
Harry E. Lillibridge	
Photogeology	
Photogeology Applied to Petroleum Exploration.....Apr.	84
A. R. Wasem	
Radioactivity	
Reef Surveying With Radioactivity.....Jan.	61
R. A. Stothart	
Gammatron Surveys.....Nov.	86
Bernard Lang	
Reserves	
Natural Gas and Natural Gas Liquid Reserves in the U. S.June	140
N. C. McGowen	
Seismograph	
Seismic Problems in Reef Shooting.....Feb. 1	69
Neal Clayton	
Prospecting for Reefs with the Seismograph.....Apr.	74
Dr. E. D. Alcock	
Low Cost Evaluation of Small Lease Blocks By the Seismograph.....Apr.	82
H. N. Thralls—C. C. Brooks	
Primary Seismic Evidence of Limestone Reefs.....Sept.	83
Fred J. Agnich—William P. Harvey	
Explosives for Seismograph Prospecting.....Dec.	73
Lawrence W. Braniff	
Shales	
Are Oil Shales Natural Source Beds of Petroleum?.....Part I.....Aug.	80
Bernard J. Ferris	
(Conclusion).....Part II.....Oct.	85
Stratigraphic Convergence Problems	
Stratigraphic Convergence Problems.....Apr.	57
R. B. Wheeler—R. M. Swenik	
Stratigraphic Prospects in Southwestern Oklahoma.....Aug.	73
C. A. Caswell	
West Texas	
West Texas Leads in Regional Geophysical Activity.....Feb. 15	61
West Texas Strike Highlights U. S. Field Activity.....Feb. 15	62
Primary Seismic Evidence of Limestone Reefs.....Sept.	83
F. J. Agnich—W. P. Harvey	
Famed Reef Play Greatly Expanded By Recent New Discoveries.....Sept.	88
Tex-Harvey Field Opens Large New Producing Zone.....Sept.	93
New Deep Discoveries Renew Pre-Permian Search in Northwest Sector.....Sept.	94
Pegasus-Sweetie Peck Fields Demonstrate Deep Possibilities in Midland Basin.....Sept.	96
Goldsmith 5600 Pool Outstanding for Proved Undrilled Locations.....Sept.	98
Dollarhide Field Shallower Clear Fork Now Holds Attention.....Sept.	100
Important Plays in West Texas-New Mexico.....Sept.	93
West Texas-Southeast New Mexico—Map (Insert).....Sept.	1956
Wildcatting	
Wildcatting Success Gains Percentagewise in 1949.....Feb. 15	60
Wyoming	
"Strat Trap" Search Need Shown by Wyoming Basin.....Nov.	75
Henry Carter Rea	

DRILLING

Acidizing	
Selective Acidizing in the Permian Basin.....	Sept. 116 J. E. Kastrop
Barge	
A Model Design of a New Type Drilling Barge.....	Feb. 1 108
Bits	
Factors Affecting Penetration Rate of Rock Bits	
W. K. Bielstein—G. E. Cannon	
Part I	May 89
Part II	June 171
Block Deflector	
Humble's Block Deflector Speeds Trip Time	Jan. 83 J. E. Kastrop
Blowouts	
Dry Ice Prevents Blowout.....	Feb. 1 80
Well Blowouts in California Drilling....	Part IOct. 99
Part II	Nov. 132
Cable Tool	
Care and Handling of Cable Tool Wire Lines.....	Feb. 1 95 E. L. Kilgler
Casing	
Advance Preparation for a Casing Job	Mar. 97 Glen D. Hughes
Surface Casing Failures	Dec. 129 B. B. Smith
Cement	
Air Entrapment During Primary Cement Jobs.....	Jan. 110 Waldo Grossman
Chain Drives	
Care and Maintenance of Chain Drives	Mar. 97 W. W. Klemme
Communication	
Rig-to-Office Communication	May 104 C. J. Paine—Jerry Stover
Coring	
Relative Economics of Diamond Coring and Drilling....	May 83 C. Deely
Costs	
A Contractor Figures His Costs.....	Dec. 125 Jack H. Abernathy
Crown Block	
Running Into Crown Block	Aug. 120
Deep Drilling	
New Drilling Depth Records Established in 1949.....	Feb. 15 86
Power Rig Design for Deep Drilling	Sept. 146 Elton Sterrett
Records Broken by Independent Wildcat	Oct. 107 Elton Sterrett
Drainage	
Muffler Mounting to Check Drainage	Dec. 134
Drill Collar	
Replaceable End Drill Collars in Multiple Collar Strings..	Jan. 104 Part II—Conclusion
Drill Collar Preventive Maintenance in the Permian Basin	Sept. 132 John B. Coulter, Jr.
Know Your Drill Collar	Dec. 106 Trebtor B. Morris
Drill Pipe	
Vibration Problems in Drill Pipe	Feb. 1 83 Kenneth N. Mills
Drill Pipe Tool Joints—Portable Automatic Hard-Facing..	Mar. 94 J. G. Watson, Jr.—H. N. Keener
Nondestructive Testing in Open Hole.....	July 1 87 Norman Bowers
Drill Stem	
Drill-Stem Testing in Open Hole	Jan. 113 J. E. Smith
Engines	
Care of Gas Drilling Engines	Apr. 110 John A. Boatman
Care of Diesel Drilling Engines	Oct. 113 John A. Boatman
Equipment	
Drilling Rig Belt Drives	Jan. 99 Tyler G. Hicks
Swift Progress Made in New Drilling Methods and Equipment	Feb. 15 88 E. C. Hellums
Moving Day on the Gulf Coast	June 159 Mark Olson
Dog House Mounted on Collapsible Rack	Oct. 106 Gilbert M. Wilson
Explosives	
Developments in Oil Well Explosives	Nov. 121 Anthony Gibbon
Fluorelogs	
The Four Types of Petroleum Hydrocarbon Curves in Drill Holes	Jan. 73 O. E. Campbell
Fluoroscope	
The Fluoroscope as a Drilling Aid	Jan. 95 Arthur H. Messersmith
Forecast	
38,331 New Wells in 1950 Is Drilling Forecast.....	Feb. 15 75 Elton Sterrett
Gulf Coast	
Gulf Coast Hurricane Design Data	Dec. 101 A. H. Glenn
Logging	
Micro Logging in West Texas and New Mexico.....	Sept. 127 A. Morazzani—W. K. Lytle, Jr.
A New System of Electric Logging	Oct. 119 W. Tapper—Walton J. Greer
Maintenance	
Sliding Stand for Boiler Tube Cleaning.....	Apr. 108 Gilbert M. Wilson
Marine Drilling	
Core Drilling for Offshore Foundation Data	Jan. 92
Wave and Storm Factors in Offshore Structure Damage..	Feb. 1 91
Hurricane Damage to Drilling Platform	Mar. 85 R. C. Farley—J. S. Leonard
Offshore Exploration by Core Drilling	Apr. 129 J. L. Chase
Drilling Rig Platform Reduces Offshore Drilling Cost...June	149 J. E. Kastrop
Offshore Structure for Irregular, Shelving Bottom	July 1 94 H. A. Hansen—J. R. Pemberton
Marsh Drilling	
Jacket-Type Piling Structure Speeds Marsh Drilling....	June 163 J. E. Kastrop
Methods	
Swift Progress Made in New Drilling Methods and Equipment	Feb. 15 88 E. C. Hellums
Mud	
Lime-Base Muds	Apr. 101 Jack L. Battle—P. E. Chaney
Oil Emulsion Drilling Mud	Nov. 101 Orien Van Dyke
Practices	
Drilling Practices in the Permian Basin.....	Sept. 111 B. B. Schabarum—F. Smith
Processes	
The Jet Perforation Process	Mar. 112 W. T. Box—R. F. Melklejohn
Use of Shaped Charge Process for Open Hole Shooting..	Aug. 99 J. T. Gardiner
Pumps	
Flatboat Base for Mud Pumps	Nov. 114
Care and Maintenance of Slush Pumps	Dec. 118 W. J. Redman
Rigs	
Faster Performance Causes 13.3 Percent Decrease in Rigs in Operation	Feb. 15 99
The Balanced Rotary Rig	July 1 109 C. H. Oberg
Power Rig Design for Deep Drilling	Sept. 146 Elton Sterrett
Safety	
Safety Training by Specific Practice Problems	
J. I. Powell	
Part I —Drilling Rig Safety—Rotary Tongs.....	Apr. 114
Part II —Drilling Rig Safety—Pipe Handling Through V-Door on Catwalk and Across.....	May 104
Part III —Pipe Slips and Elevators	June 180
Part IV —Drilling Rig Safety—Pipe Stabbing, Racking and Spinning Practices	July 1 103
Part V —The Driller's Responsibility in Accident Prevention	Aug. 122
Part VI —Derrick Structure Practices	Sept. 152
Part VII—Fluid Pressure Hazards in Rotary Drilling Operations	Oct. 128
Safety in Color	Nov. 115 D. A. Klemme
Sand	
Sand Consolidation With Resins	May 96 Wayne F. Hower
Fracture Sludge—A Basic Factor in Sand Plugging.....	Nov. 126 F. R. Cozzens
Shutoffs	
Plastics in Gas Water Shutoffs	Mar. 108 J. F. McDonald
Training	
Supervisory Training in the Drilling Industry	Dec. 99 A. L. Franzolino
Tubing	
Use of Tubing as Drill Pipe	Aug. 105 W. F. Bates
Water Wells	
Portable Unit to Service and Pump Rig Water Wells...Nov.	124 Gilbert M. Wilson

Well Completion

Well Completion Practices		
Dr. Carroll M. Beeson		
Part III—Well Washing	Jan.	88
Part IV—Remedial Work	Feb. 1	108

Whipstock

Whipstock Technique for Hard Rock Drilling	Aug.	114
C. P. Collins		

Wire Rope

Seizing and Socketing Wire Rope	Nov.	109
---------------------------------	------	-----

Well Observation

Sitting on a Well	Feb. 1	100
C. A. Caswell		

DRILLING HINTS

Build Utilized Mud Return Trough	Jan.	119
Fabricate a Change Room Heater	Jan.	119
Improve Tank Skid Base	Jan.	120
Construct Slide for Drill Pipe	Jan.	120
Compact Boiler Feed Water Control Unit	Jan.	124
Use Wire Line to Rack Casing	Jan.	124
Wash Cable Tool Samples	Jan.	126
Store Winch Snatch Block	Jan.	126
Rack Traveling Block	Jan.	128
Hard-Surface Tool Joints	Jan.	128
Build Mixing Drum Shelf	Jan.	130
Service Pumps With One Tool	Jan.	130
Use Boomer to Elevate Mast	Jan.	132
Manifold Boiler Blowdown Lines	Feb. 1	114
Safeguard Mud Pump Suction Hose	Feb. 1	114
Detect Pin-Hole Leaks in Drill Pipe	Feb. 1	117
Install Lubricating Device on Mud Pump	Feb. 1	117
Build Piston Rack	Feb. 1	118
Affix Rig Tiedown Post	Feb. 1	118
Store Crew Clothing in Metal Lockers	Feb. 1	118
Utilize Valve Extensions	Feb. 1	120
Reduce Drill Pipe Failures	Feb. 1	120
Fabricate V-Belt Guard	Feb. 1	122
Utilize Tool, Dog House	Feb. 1	122
Make Cover for Surveying Instruments	Feb. 1	124
Prevent Steam Line Water-Slugs	Feb. 15	104
Add Safety Apparatus to Cathhead	Feb. 15	104
Guard Hose on Small Rig	Feb. 15	107
Perform Cathhead Jobs with Hoist	Feb. 15	107
Prevent Belt Drive Whip	Feb. 15	107
Make Drill Pipe Lay-Down Roller	Feb. 15	108
Fabricate Pry-Bar for Shifting Pipe	Feb. 15	108
Support Protective Cover Over Mud Tank	Feb. 15	110
Use Salvaged Pipe to Construct Ramp	Feb. 15	110
Make Platform for Cathhead Operator	Feb. 15	112
Avoid Pump Trouble in Early Drilling	Feb. 15	112
Affix Pump to Mud Lines	Feb. 15	114
Provide Bench for Samples	Feb. 15	114
Erect Floor Level Loading Ramp	Mar.	124
Install Blowout Preventer Control	Mar.	124
Store Lubricants at Rig	Mar.	126
Improve Shale Jet Unit	Mar.	126
Regulate Shale Shaker	Mar.	128
Measure Fluid in Well	Mar.	128
Attach Roof on Boiler Feed Water Unit	Mar.	130
Install Boiler Feed Pump Indicator	Mar.	132
Build Convenient Mud Testing Bench	Mar.	134
Bleed Off Casing Pressure from Well	Mar.	135
Hard Surface Pipe Rack	Mar.	136
Make Pipe Laydown Unit	Mar.	136
Lubricate Mud Pump Piston Rods	Apr.	142
Make Adjustable Elevated Walks	Apr.	142
Protect Under-Floor Pipe	Apr.	144
Prevent Lime Settlement	Apr.	144
Build Sturdy, Convenient Floor Heater	Apr.	147
Make Mechanical Clothes Washer for Rig	Apr.	148
Increase Feed of Mud Mixture Hopper	Apr.	150
Convey Return Fluid to Separate Tanks	Apr.	152
Control Below-Floor Rotary Drive Engine	Apr.	153
Heat Boiler Feed Water	Apr.	154
Reduce Tong Line Hazard	Apr.	154
Protect Mud Treating Materials	May	124
Store Equipment Below Rig Floor	May	124
Add Mud Tank Walkways	May	126
Handle Lubricating Oil	May	126
Speed Setting up Battery of Mud Pumps	May	128
Place Rotary Drive for Improved Visibility	May	131
Make Heavy Utility Rack	May	132
Improve Rig Floor Light	May	132
Build Hinged Roof to Protect Driller	May	134
Dry Field Gas for Drilling Rig Use	May	136
Hold Down Canvas Windbreakers	May	137
Prevent Scuffing of Rotary Hose	May	138
Support Handle of Blowout Preventer	May	139
Remove Sand from Drilling Fluid	June	188
Discharge Pressure Relief Valve	June	188
Collect Rain Water	June	190
Prevent Scuffing Hose	June	190
Connect Steel Ramp to Rig Pipe Walk	June	192
Mount Measuring Line Reel and Drive	June	194
Set Up Light Plant with Standby Unit	June	196
Keep Pistons Ready for Installation	June	196
Improve Mud Assembly	June	198
Lubricate Pump Rods	June	198
Fix Traveling Block When Rig Is Skidded	June	199
Care for Small Tools	June	200
Check Level in Lubricating Tank	July 1	122
Hinge Walkways on Boiler Barges	July 1	122
Unload Mud from Barge	July 1	124
Improve Stairs and Ramp	July 1	124
Support Elevated Ditch	July 1	126
Wash Crew Men's Clothes	July 1	126
Add Ribs to Stabilize Sidetracking Tool	July 1	128

Inspect and Fill Engine Radiators	July 1	138
Store Tools Below Floor	July 1	130
Utilize Fluid Manifold	July 1	130
Control Engine Throttle	July 1	132
Mount Wire Rope Guide	July 1	136
Handle Dry Mud Materials	July 1	136
Improve Mud System Piping Setup	Aug.	133
Utilize Single-Acting Gas Engine	Aug.	133
Parallel Pump Discharge	Aug.	134
Fabricate Chemical Tank	Aug.	134
Make Telescoping Mud Return Line	Aug.	136
Rig Up Paraffin Scraper	Aug.	138
Control Suction Height	Aug.	138
Find Leak in Tubing String	Aug.	140
Provide Additional Cooling for Engine	Aug.	140
Simplify Engine Lubricating Job	Aug.	142
Construct Mud Weighing Device	Aug.	144
Drive Generator from Crankshaft	Aug.	146
Facilitate Running Casing in Deep Well	Aug.	146
Flame-Harden Tool Joints	Aug.	148
Install V-Belts on Power Pumps	Sept.	163
Improve Wire Line Reel Mounting	Sept.	163
Extend Rig Floor Level	Sept.	164
Connect Discharge Lines	Sept.	164
Construct Chemical Tank	Sept.	168
Build Combination Tank	Sept.	170
Control Discharge Fluid from Shale Shaker	Sept.	172
Systemize Drilling Lubrication Program	Sept.	174
Provide Special Ramp for Unloading	Sept.	176
Shorten Pipe Tong Counterweight Lines	Sept.	177
Service Heavy Engines	Sept.	178
Manifold Mud Lines for Greater Flexibility	Oct.	140
Set Up Mud Gun to Fight Oil Well Fires	Oct.	140
Construct Heavy Duty Pipe Rack Units	Oct.	143
Provide Engine Radiator Make-Up Water	Oct.	143
Conserve Drilling Water	Oct.	144
Take Off Cutting Samples	Oct.	144
Mount Washdown Pump in Tank Recess	Oct.	146
Handle Drill Pipe on Floating Tender	Oct.	148
Connect Up Rod Lubricating Pump	Oct.	149
Extinguish Exhaust Flame	Oct.	150
Provide Safety Footing	Oct.	150
Muffle Steam Exhaust in Townlot Drilling	Nov.	140
Make Inexpensive Wire Line Core Reel	Nov.	140
Cool Drawworks Brakes	Nov.	142
Add Cathhead Foot Control	Nov.	142
Provide Dual Lubrication	Nov.	145
Furnish Hot Water Supply	Nov.	145
Incorporate Steam Line in Substructure	Nov.	146
Brace Drilling Line Spool	Nov.	148
Build Shower on Power Rig	Nov.	148
Store Overshots in Derrick Floor Rack	Nov.	150
Fabricate Improved Line Backup Post	Nov.	151
Mount Engine Room Fan	Nov.	152
Prepare Rig for Skidding	Nov.	152
Remove Foam from Steam Boiler Battery	Dec.	136
Mount Preventers for Simple Installation	Dec.	136
Use Skid as Mud Header	Dec.	138
Connect Up Exhaust Lines	Dec.	138
Make Boat Bumpers of Old Rubber Tires	Dec.	140
Construct Mud Pump Suction Mast Support	Dec.	142
Support Walkaround Floor	Dec.	144
Improve V-Ramp Structure	Dec.	144
Make Sturdy Guard for Radiator Grille	Dec.	145
Mount Washdown Pump	Dec.	146

PRODUCTION

Acidizing

Permeability Surveying and Controlled Acidizing	Oct.	164
B. M. Kingston		

Air-Gas Drive

The Mechanism of Air-Gas Drive		
D. E. Menzle—R. F. Nielsen		
Part I	June	211
Part II	July 1	147

Boiler

Boiler Generates Inert Gases for Injection at Elk Basin	Jan.	165
Setting for Treating Plant Boiler	July 1	146

Capillary Pressure

Residual Water and Residual Oil by Capillary Pressure Technique	Aug.	160
C. D. Stahl—R. F. Nielsen		

Clay

Influence of Clay in Oil Production	Dec.	174
Ben B. Cox		

Coatings

Surface Preparation for Anticorrosive Coatings	Oct.	174
--	------	-----

Condensate

Low Temperature Separation Increases Recovery of Condensate from Natural Gas	June	203
Arthur F. Barry—Asbury S. Parks		

Continental Shelf

Installation of Offshore Flow Lines	Feb. 1	127
H. E. Denzler, Jr.—J. W. Scott—J. M. West		

Cores

Measuring Porosity of Oil Field Cores	Mar.	167
C. G. Ball—D. B. Tallaferra		

Core Analysis	
Core Analysis Problems in Secondary Recovery.....Aug.	156
Ray Staples	
Core Analysis Technique for Limestone and Dolomite....Sept.	204
L. C. Locke—J. E. Bliss	
Corrosion	
Corrosion Control in the Cotton Valley Field.....May	141
Alton J. Carrol	
Organic Corrosion Preventive	159
Dr. Charles M. Blair	
Plastics Combat Wellhead Corrosion in Galveston Bay Fields	162
J. E. Kastrop	
Corrosion Research Uses Radioactive Tracers.....Apr.	188
Surface Preparation for Anticorrosive Coatings	174
C. G. Munger	
Crank Case	
Maintaining Crank Case Oil Level.....June	242
Cycling	
The Cranfield Cycling-Pressure Maintenance Unit	
Leo E. Hines	
Part I —Basis of the Unitization Agreement..Feb. 1	131
Part II —General Operational Plan	139
Part III—(Conclusion) Gas Well Flow Rates from Electric Models	174
Apr.	
Depth Record	
California Holds Producing Depth Record by 20-Foot Margin	140
Feb. 15	
Fluid Injection	
Injectivity Indices—Their Prediction and Determination..Feb. 1	152
N. Van Wingen	
Gas Injection	
Larimore Gas Injection Project.....May	164
Marvin A. Remke	
North Cowden Field Gas Injection Project.....Oct.	163
M. H. Rahmes	
Gas Lift—Principles and Practice	
C. D. Fletcher	
Part I	157
July 1	
Part II	182
Aug.	
Part III	217
Sept.	
Part IV—Conclusion	155
Oct.	
Gas Lift Wells	
Scale Deposit Prevention in Gas Lift Wells.....June	228
R. B. Walter	
Gas Lifting	
Gas Lifting Deep Wells in the Permian Basin.....Sept.	190
William P. Massey	
Gauges	
Field Testing and Servicing of Indicating Pressure Gauges	183
Oct.	
J. O. Krebs	
General	
U. S. Crude Production to Climb After 1949 Slump.....Feb. 15	121
Liquefied Petroleum Gas	
LPG Sales Continue to Soar.....Feb. 15	148
K. W. Rugh—E. O. Mattocks	
Louisiana	
Secondary Recovery in Louisiana.....Nov.	155
James H. Tillery	
Mercury	
How to Save, Reclaim Mercury.....Feb. 15	158
James O. Krebs	
Methods and Equipment	
Efficiency Increased by New Production Methods and Equipment	144
Feb. 15	
Natural Gas	
Natural Gas Production Will Continue Record Expansion..Feb. 15	126
Dehydration of Natural Gas.....May	148
R. C. Buchan	
Natural Gasoline	
Natural Gasoline Output Rises 50 Percent in Five Years..Feb. 15	132
Operating Costs	
Slaughter Field Problems Increase Operating Costs.....Sept.	209
Walter D. Powers	
Paraffin	
Electric Heater Cuts Paraffin.....Dec.	152
O. C. Dunn, Jr.	
Permeability Surveying	
Permeability Surveying and Controlled Acidizing.....Oct.	164
B. M. Kingston	
Piling Structures	
Dry Rot Prevention in Piling Structures.....Oct.	180
Elton Sterrett	
Plastics	
Plastics Combat Wellhead Corrosion in Galveston Bay Fields	162
Apr.	
J. E. Kastrop	
Pollution	
Stream Analyses Locate Oil Field Pollution Sources....Feb. 1	148
Ogden S. Jones	
Pool Performance	
Empirical Method of Measuring Oil Pool Performance..Nov.	138
Carlton Beal	
Porosity-Permeability	
Porosity-Permeability Check by Electric Log.....Aug.	165
R. C. Barber	
Pressure	
Selective Pressures Release Bypassed Oil.....Feb. 1	159
F. R. Cozzens	
Survey Coordination Aids Bottom-Hole Pressure Tests..Sept.	199
Pumps	
Engine-Driven Centrifugal Pump Calculations.....May	169
Tyler G. Hicks	
Pumping Equipment	
19,889 Wells to Require Pumping Equipment.....Feb. 15	117
Milton Sterrett	
Pumping Equipment Selection for Lowering Lifting Cost..July 1	139
K. N. Mills	
Sharp Growth Boosts Pumping Equipment Sales.....Oct.	178
Warren L. Baker	
Reef Fields	
The New Reef Fields of Texas.....Sept.	181
C. H. Keplinger—J. N. Wanenmacher	
Refinery Production	
Refinery Output to Continue Below Record Level— Curtailed in 1949.....Feb. 15	152
Relative Permeability Ratios	
Interpretation of Field Data on the Basis of Relative Permeability Ratios	135
Jan.	
Reserves	
Proved Petroleum Reserves Increased to New High Level	134
Feb. 15	
Secondary Recovery	
Secondary Recovery Evaluation.....Apr.	169
R. C. Earlougher	
Core Analysis Problems in Secondary Recovery.....Aug.	156
Ray Staples	
Secondary Recovery in Louisiana	155
Nov.	
James H. Tillery	
Shooting	
Shot Pattern Effect on Rock Reactions.....May	177
F. R. Cozzens	
Sucker Rods	
Tapered Sucker Rod Strings	186
Nov.	
Alex Quayle	
Tank Farm	
Portable Tank Farm for Gauging Wildcat Wells.....Dec.	149
Gilbert M. Wilson	
Vapor Pressure	
Effect of Reservoir Rock on Vapor-Liquid Equilibrium....May	175
Dr. F. C. Weinaug	
Water Conditioning	
Water Conditioning Study	148
Jan.	
Anthony Gibbon	
Water-Flooding	
Theory and Practice of Water-Flood Operations	158
Jan.	
M. H. Stekoll	
Corrosion in Water-Flood Operations	157
Apr.	
F. A. Frange	
Experts Discuss Water-Flood Problems.....June	235
Anthony Gibbon	
Flooding Increases Unit Output from 34 to 1600 Barrels Oil Per Day	177
Nov.	
Water Treating	
Minimizing Red Water Troubles	152
July 1	
L. C. Case	
Injection Water-Treating Problems	176
Aug.	
Lawrence K. Cecil	
Wells	
9937 Producing Wells Added in 1949.....Feb. 15	142

Well Cleaning

Down-Hole Chemical Treatment to Clean Clogged Formations	Mar.	171
--	------	-----

Well Engineering

Thermal Stresses Around an Uncased Hole—Part I.....	Dec.	167
K. D. Saunders—A. D. Topping		

Well Packing

Multiple Packing of Input Wells	Aug.	151
W. A. Hesslin		

Well Plugging

Effect of Well-Plugging Technique	Oct.	167
F. R. Cozzens		

Workover

Folding Walkway for Workover Rig	June	232
--	------	-----

Zonal Damage

Evaluation of Zonal Damage	Dec.	156
N. Johnston—N. Van Wingen		

PRODUCTION HINTS

Prefabricate Simplified Tank Piping	Jan.	167
Build Efficient Service Truck Hoist	Jan.	167
Build Sucker Rod Hanger	Jan.	168
Use Winch to Make Digger	Jan.	168
Make Portable Gas Meter Run	Jan.	169
Make Positive Choke Tool	Jan.	170
Make Rack for Chemical Drum	Jan.	170
Build Two-Bar Well Enclosure	Jan.	172
Transport Long Manometer	Jan.	173
Handle High-Pressure Gas	Jan.	174
Fabricate Pipe Yard Work Bench	Feb. 1	162
Rack Oil Treating Chemical Drums	Feb. 1	162
Protect Water Shell of Flow Line Heater	Feb. 1	163
Fasten Pipe on Truck	Feb. 1	164
Speed Connection of Flow Line in Field	Feb. 1	165
Build Adjustable Dolly	Feb. 1	166
Equip Field Pickup Truck	Feb. 1	166
Add Bleed-Off Line to Well Head	Feb. 15	166
Haul Pulling Rods Without Trailer	Feb. 15	166
Separate Gas, Oil at Treating Tank	Feb. 15	167
Protect Fuel Regulators	Feb. 15	160
Prevent Weather Damage to Meter	Feb. 15	160
Protect Workmen on Beam	Feb. 15	162
Ventilate Tank Bottoms	Feb. 15	162
Insulate Flow Line Thermometer Well	Feb. 15	164
Improve Skimmer Header	Feb. 15	166
Counterbalance Expansion Loops	Mar.	172
Separate Gas from Oil at Tanks	Mar.	172
Use Tank Battery Pump	Mar.	174
Pipe Heater-Treater Gas	Mar.	174
Make Setting for Meters	Mar.	176
Test Gas-Lift Injection	Mar.	178
Construct Portable Tubing Racks	Apr.	189
Lift Counterweight to Pump Beam	Apr.	189
Rack Chemical Drum for Easy Handling	Apr.	192
Transfer Men from Offshore Structures	Apr.	194
Elevate Pulling Machines	Apr.	195
Protect Orifice Meters	Apr.	195
Add Drips to Gas Line	Apr.	196
Provide Access to Pumping Beam	May	182
Store Piping Materials at Yard	May	182
Raise Temperature in Meter Enclosure	May	183
Support Exhaust Stack	May	184
Add Pulling Unit Anchor	May	186
Make Electric Power Plant for Lease Use	May	188
Protect Connections of Water Knockout	May	188
Guard Threads of Counterweight Bolts	May	189
Handle Field Lubricants	May	190
Dispose of Waste Oil	June	244
Simplify Gauging Light Crude Tanks	June	244
Store Positive Chokes	June	244
Guard Separator from Fluid Overflow	June	245
Add Filter to Choke	June	246
Prevent Freezing Gas-Lift Controls	June	246
Store Run Tickets in Handy Container	June	248
Extend Lube Oil Line	June	249
Group Sample Cocks in Protective Box	June	250
Add Test Connection to Well Flow Line	June	250
Make Cover for High Pressure Line	July 1	165
Skid-Mount Light Well Pulling Unit	July 1	165
Add Chemical to Casing	July 1	166
Hook Up Treating Tank	July 1	166
Read Tank Gauge Glass	July 1	171
Hook Up Relief Valve	July 1	171
Connect Pump Manifold	July 1	172
Utilize Flowing Well Gas	Aug.	193
Build Tank for Gas-Lift	Aug.	193
Make Simple Device for Gauging Tank	Aug.	193
Use Tab to Quickly Identify Choke Sizes	Aug.	194
Prevent Air from Entering Oil Line	Aug.	194
Add Relief Connection	Aug.	197
Make Small Parts Cleaner	Aug.	198
Anchor Pulling Unit with Turnbuckles	Aug.	198
Handle Heavy Equipment	Aug.	200
Provide Handy Well Data Sheet	Sept.	224
Reduce Cellar Cover Maintenance	Sept.	224
Build Portable Scrubber	Sept.	226
Construct Improved Rack for Oil Drums	Sept.	226
Build Self-Closing Gate	Sept.	229
Make Guard Rail for Counterweight	Sept.	230
Construct Central Lube Storage Depot	Sept.	230
Reduce Shear on Anchor Block Bolts	Sept.	232
Record Flow of Liquids Over Weir Meter	Oct.	187
Rig Power Starter for Central Pump Unit	Oct.	187
Gauge Water Production	Oct.	188
Protect Chlorine Vessel from Salt Water	Oct.	190

Regulate Water Tank Level Automatically	Oct.	192
Signal Gauger at Lease Tank Battery	Oct.	193
Make Handy Map Holder	Oct.	194
Add Pump Unit Counterbalance Weights	Nov.	190
Regulate Water Volume in Heater-Treater	Nov.	190
Add Engine Make-up Oil	Nov.	192
Extend Line Valve Stem	Nov.	192
Conserve Batteries in Starting System	Nov.	193
Anchor Production Derrick Ladder	Nov.	194
Identify Flow Lines at Large Battery	Nov.	194
Brace Roadway Gate to Reduce Warping	Nov.	195
Construct Improved Small Gate Latch	Nov.	196
Drain Firewall Enclosure	Dec.	185
Identify Buried Valves	Dec.	185
Attach Guard to Well Pumping Jack	Dec.	185
Measure Heat of Flowing Gas Line	Dec.	186
Connect Well-Head to Pump Gas Well	Dec.	186
Apply Color for Safety	Dec.	188
Connect Portable Meter to Gas Riser	Dec.	189
Fabricate Improved Oil Well Enclosure	Dec.	190
Pump Lease Water Supply	Dec.	191
Make Self-Closing Gate	Dec.	192

PIPE LINE**Activity**

Pipe Line Activity in 1949	Feb. 15	172
----------------------------------	---------	-----

Atomic Energy

Radioactive Tracers in Products Handling	Nov.	208
--	------	-----

Bridge

Oil Pipe Line Suspension Bridge	Aug.	203
---------------------------------------	------	-----

Cathodic Protection

Criteria for Cathodic Protection	July 1	177
A Bibliography on Cathodic Protection	July 1	179
F. A. Rohrman		
Cathodic Protection of Line	Nov.	206
Gordon L. Doremus		
Determination of Current Requirements for Cathodic Protection	Nov.	253
Marshall E. Parker		

Coating

Concrete-Coated Pipe for Swampy Terrain	Nov.	247
Anthony Gibbon		

Communication

Keystone's Microwave System	Mar.	192
J. D. Munton		
Two-Way Radio Speeds Operations	Apr.	199
H. G. Pegus		

Compressor Station

Compressor Station Automatic Shutdown Control	Nov.	243
Elton Sterrett		

Construction

Pipe Line Construction	Jan.	193
Pipe Line Construction	Feb. 1	187
Pipe Line Construction	Feb. 15	169
Pipe Line Construction	Mar.	197
Pipe Line Construction	Apr.	215
Pipe Line Construction	May	209
Pipe Line Construction	June	271
Pipe Line Construction	July 1	193
Pipe Line Construction	Aug.	219
Pipe Line Construction	Sept.	251
Pipe Line Construction	Oct.	213
Pipe Line Construction	Nov.	268
Pipe Line Construction	Dec.	211

Crankcase

Crankcase Explosions	Nov.	213
F. V. Cook		
Discussion of Crankcase Explosions	Dec.	201

Crankshafts

Checking Crankshafts—Care and Maintenance	May	195
F. V. Cook		

Crude Oil—Sour

Safe Handling of H ₂ S Bearing Crudes	Mar.	181
--	------	-----

Dehydrators

Operating and Design Features of Adsorption-Type Dehydrators	Jan.	184
--	------	-----

Electric Power

Kilowatt Hours and Cubic Feet by the Billion	Feb. 1	169
W. T. Thagard		

Employee Training

Driver Tests as Training Aids	Nov.	228
Gene Miller		

Engines

Dual Fuel Engine Development	Feb. 1	180
L. W. Crump		
Safe Engine Starting—Care and Maintenance	Aug.	210
Supercharged Four-Cycle Gas Engine	Nov.	230
Ralph L. Boyer		

PIPE LINE HINTS

Flow	
Gas Flow Chart—Calculation and Integration.....Apr.	206
Cecil Van Gundy	
Flow Conditions in Large Diameter Crude Lines.....Oct.	197
Lowell E. Anderson	
Foundation	
Foundation Stabilization Whips Quicksand Problem.....May	193
Anthony Gibbon	
Gases	
Purification and Dehydration of Gases.....June	253
C. L. Blohm—W. F. Chapin	
Gas Measurement	
Measurement and Control of High Pressure GasAug.	205
A. F. Kraus	
Heaters	
Design of Heaters to Eliminate Freezing and Hydrate FormationJune	267
H. R. Wortman	
Heat Exchangers	
Gas Heat Exchanging in Transmission Systems.....May	200
F. S. Young	
Heating and Distribution System for Station Fuel Gas...Oct.	205
Leaks	
Stop That Drip!July 1	175
J. R. (Dick) Ellis	
Looping	
Simplified Loop Line Gas Flow Equation.....May	205
J. I. Morris	
Slack Loop Practice in Lowering-In Procedure.....Nov.	220
T. B. La Rock	
Meter	
Practical Aspects of Orifice Meter Calculations.....Jan.	177
Herman A. Jacobson	
Motors	
Care and Maintenance of Electric Motors.....Mar.	186
Operations	
Permian Basin Pipe Lines Transport 1 Million Barrels DailySept.	235
Cecil W. Smith	
New Short Line Speeds West Texas Crude.....Sept.	242
Elton Sterrett	
Canada's "Big-Inch" Now Operating.....Dec.	195
Anthony Gibbon	
Pulsation Eliminators	
Results in Experiments with Pulsation Eliminators.....June	264
David J. Masson	
Pumping	
Gear Shift Starts Cold Oil.....Feb. 1	174
Elmer Weaver	
Salvage	
Cutting Pipe Salvage CostsJan.	188
Scraper	
Magnetic Scraper LocatorOct.	202
Jack Weir Jones	
Storage	
Underground Storage of Natural GasAug.	212
W. R. Kubista	
Submarine	
Laying Ten-Inch Submarine Pipe Line.....Apr.	204
Gilbert M. Wilson	
Deep Water Pipe Line—Design and Construction.....Nov.	199
Elton Sterrett	
Tank Farm	
Monitoring Panel and Automatic Controls Improve Tank Farm EfficiencySept.	238
Gilbert M. Wilson	
Tapping	
Tapping Pipe Lines Under Pressure.....Feb. 1	176
Arthur M. Hill	
Tractor	
You'll Love That Crawler Tractor . . . If.....Mar.	188
W. W. Black	
Valves	
Maintenance and Operation of Plug Valves.....Oct.	210
Roy R. Bush	
Waterhammer	
Elasticity Modulus Determinations Yield Waterhammer DataAug.	216

Protect Tools and Gauges	Jan.	195
Enclose Tower Fan and Shaft	Jan.	195
Safeguard Rupture Discs	Jan.	195
Provide Water Tank Cover	Jan.	196
Standardize Exhaust Pipes	Jan.	196
Add Steps to Pump Manifold	Jan.	198
Keep Dust Off Oil Pump Rods	Jan.	198
Construct Adjustable Stack Guy Anchor	Jan.	200
Check Overflow of Surge Tank	Feb. 1	190
Drain Stray Current from Conduit	Feb. 1	190
Remove Paraffin from Marine Pipe Lines	Feb. 1	191
Suspend Line for Overhead Approach	Feb. 1	192
Build Drain Pipe Catch Basin Grille	Feb. 1	192
Construct Vent for Engine Crankcase	Feb. 1	193
Make Flow Direction Flags	Feb. 1	194
Support Large Plug Valves	Feb. 1	194
Shield Compressor Engines	Feb. 15	185
Transfer Station Maintenance Loads	Feb. 15	185
Put Motor on Slide Rails	Feb. 15	185
Improve Traction of Crane	Feb. 15	185
Put Cover on Magnetos	Feb. 15	188
Support Overhead Piping	Feb. 15	190
Mount Motor Controls	Feb. 15	190
Level Main Check Valve	Feb. 15	190
Lift Heavy Cover from Line Strainer	Feb. 15	191
Guard Portable Meters	Feb. 15	192
Handle Heavy Equipment	Mar.	199
Increase Leverage on Scraper Valve	Mar.	199
Secure Joint Protectors	Mar.	199
Improve Cleaning Machine	Mar.	200
Protect Station Gauges	Mar.	200
Extend Range of Gin Pole	Mar.	202
Rotate Triple Pipe Joint	Mar.	204
Guard Valve Operator	Mar.	204
Enclose Compressor	Apr.	217
Bend Small Diameter Pipe at Job Site	Apr.	217
Transport Oxygen Bottles	Apr.	217
Mount Air Dryer Cylinder	Apr.	218
Add Walkway Over Lines	Apr.	218
Compensate Line Expansion at Bends	Apr.	220
Protect Coating on Large, Heavy Lines	Apr.	220
Speed Installation of Hold-Down Clamp	Apr.	221
Use Flexible Hose to Connect Meter	Apr.	222
Improve Usefulness of Pipe Vise Stand	Apr.	222
Manifold Engine Exhaust Lines	May	211
Equip Welding Truck with Anvil	May	211
Construct Flexible Water Pump Mounting	May	212
Make Winch Line Hook for Handling Pipe	May	212
Lubricate Piston Rods	May	214
Provide Safety Shutoff	May	214
Retain Flange Bolts for Easy Handling	May	216
Eliminate Hazard in Heavy Tire Repairs	May	216
Make Vented Welding Repair Patch	June	273
Align Pump Connections	June	273
Devise Lock for Main Line Block Valve	June	274
Improve Pipe Line Trunk	June	276
Build Detachable Field Anvil Base	June	277
Make Efficient Line Tapping Device	June	278
Handle Overhead Extension Cord	July 1	196
Make Movable Line-Crossing Stile	July 1	196
Install Positive Ignition Controls	July 1	197
Use Trunk Winch to Backfill Small Lines	July 1	198
Increase Capacity of Recording Pens	July 1	198
Construct Convenient Reel for Fire Hose	July 1	199
Secure Main Bearing Cap	July 1	200
Keep Shop Tools at Hand	Aug.	223
Power Two Pumps by Differential Gear	Aug.	223
Support Small Line Span	Aug.	223
Build Condensate Collection System	Aug.	224
Power Lubricating System	Aug.	226
Add Toe-Board to Catwalk	Aug.	226
Store Pipe Line Welding Cable on Skid	Sept.	254
Speed Cleaning Rights-of-Way and Yards	Sept.	254
Connect Pumps to Engine for Flexibility	Sept.	254
Skid Heavy Sections of Flanged-End Pipe	Sept.	256
Convert Engine to Natural Gas	Sept.	256
Add Safety Shield to Welding Helmet	Sept.	257
Construct Creek Crossing	Sept.	258
Provide Openings for Line Cleaning Pigs	Oct.	216
Make Drum Storage Rack for Station Use	Oct.	216
Adjust Load on Rollers	Oct.	217
Lock Pipe Line Valves	Oct.	217
Brace Service Platform	Oct.	218
Install Eyebath for Workers' Protection	Oct.	219
Enlarge Indicator Pane	Oct.	220
Protect Meter Piping	Oct.	220
Measure Makeup Water	Oct.	274
Rig Drain Device for Tank Fire Wall	Nov.	274
Build Collection Units	Nov.	274
Add Quick-Acting Valve in Overhead Line	Nov.	276
Secure and Identify Main Block Valves	Nov.	276
Add Odorant to Gas Distribution System	Nov.	278
Make Portable Tester	Nov.	280
Brace Fire Hose Case	Nov.	282
Make Temporary Dolly for Low Bed Float	Dec.	214
Erect Movable Equipment Loading Ramp	Dec.	214
Install System to Cool Engine Battery	Dec.	215
Deform Reinforcing Steel	Dec.	216
Simplify Servicing Engine Radiators	Dec.	217
Remove Air from Pipe Lines	Dec.	218

INTERNATIONAL NEWS AND FEATURES

Africa	
U. S. Firms to Enter Tunisia	May 228
Henry Ozanne	
1941 Statistics	July 15 196
Airborne Magnetometer Survey Completed in North Tunisia	Sept. 274

Alaska			
Tempo Increases in Alaskan Operations	Jan.	200	
Alaska	July 15	65	
Alaskan Oil Search to Be Accelerated	Oct.	228	
Albania			
Albania	July 15	163	
Algeria			
Algeria	July 15	196	
Argentina			
Argentina Explores for Oil at Southern Tip of Continent	Jan.	222	
Argentina	July 15	104	
Australia			
Structures of the Northwest Basin in Western Australia	Mar.	210	
Eric K. Craig			
Central Queensland Wildcat May Be Spudded in March	Mar.	222	
Shell's Australian Test May Be Drilled to 10,000 Feet	July 1	224	
Australia	July 15	248	
Austria			
Austria	July 15	163	
Bahrain Island (See also Middle East)			
Bahrain Island	July 15	222	
Bolivia			
Bolivia	July 15	112	
Brazil			
Brazil	July 15	120	
Brazil Subsidiary Will Operate Small Tanker			
Fleet in Brazil	Aug.	250	
Brazil's Amazon Basin to Get First Deep Test	Oct.	230	
Burma			
Burma	July 15	226	
Canada			
Field Housing in Canada	Jan.	216	
Prospecting Licenses and Oil and Gas Leases Covering			
Crown Lands in Alberta	Jan.	217	
Helicopter and Portable Towers Simplify Gravity Surveys			
in Northern Alberta	Jan.	203	
Alberta's Golden Spike Field Given Its Second Producer	Jan.	222	
Structural Features of the Canadian Shield	Feb. 1	202	
J. M. Harrison			
Wells Drilled, Depth Total Doubled in Alberta in 1949	Feb. 1	216	
Canada Abandons Experimental Work on Tar			
Sand Deposits	Feb. 1	216	
Work Starts on \$90 Million Canadian Pipe Line	Mar.	216	
Cecil W. Smith			
Imperial Awards Contract for Refinery in Winnipeg	Mar.	224	
Radio Serves Big Line in Southern Canada	Apr.	225	
L. C. Coste			
Redwater-Edmonton Pipe Line Approved by			
Canadian Board	Apr.	250	
Refinery Contract Let—Edmonton, Alberta	Apr.	250	
Drilling Mud Problems in Western Canada	July 1	203	
E. C. Buffington			
Accounting and Tax Problems in Canada	July 1	211	
Ross T. Warner			
Canada	July 15	65	
Edmonton-Great Lakes Pipe Line Under Construction	Aug.	240	
A. Gibbon			
Alberta Flying Magnetometer Survey	Sept.	262	
Radioactivity Well Logging in Canada	Sept.	266	
S. W. McGaha			
Care and Maintenance of Canvas Wind Breaks on			
Drilling Rigs	Oct.	224	
Canada to Launch Largest Fresh Water Tankers	Oct.	229	
Saskatchewan Has Discovery in New West-Central Area	Oct.	232	
1950—Canada's Big Development Year	Dec.	221	
Mark Olson			
Significance of Canada's Oil Resources	Dec.	271	
G. W. Auxler			
Diamond Coring in Western Canada	Dec.	266	
J. F. Langston			
Reservoir Data on the Redwater Field	Dec.	260	
James E. Baugh			
Canada—Western—Geology and the Petroleum Engineer	Dec.	250	
H. N. Beach			
Important Canadian Fields	Dec.	236	
Central America			
Central America	July 15	95	
Chile			
Chile's Spring Hill Field Has 16 Producers from 29 Tests	Feb. 1	217	
Chile's First Export Crude Sent to Uruguay Refinery	Mar.	224	
Sizeable Expansion Planned for Chile's Oil Industry	May	240	
Chile	July 15	124	
Increased Production in Chile Speeds Refinery			
Construction	Aug.	248	
China			
China	July 15	226	
Colombia			
Colombian Oil Legislation Bids for Renewed Activity	Feb. 1	217	
Government Won't Hold Major Part of De Mares			
Concession	July 1	224	
Tropical Retains Lease of Colombian Concession	Oct.	232	
Colombia	July 15	124	
Tropical Continues Marketing in Colombia Under			
New Name	Sept.	274	
Cuba			
Cuba's Oil Outlook	May	219	
J. E. Kastrop			
Czechoslovakia			
Czechoslovakia Has Discovery	May	240	
Czechoslovakia	July 15	166	
Denmark			
Danish American Firm Contracts for New Concession in			
Denmark	Oct.	283	
Denmark	July 15	166	
Dominican Republic and Haiti			
Dominican Republic and Haiti	July 15	95	
East Indies			
East Indies	July 15	237	
Ecuador			
Exploratory Activity Renewed in Ecuador	Feb. 1	212	
Ecuador	July 15	131	
Egypt			
All-Egyptian Firm to Begin Early Drilling Operations	Mar.	229	
Egypt	July 15	196	
Egypt Plans New Oil Laws to Appease Foreign Firms	Oct.	236	
Egypt Restricts Tanker Movements Through Suez	Oct.	232	
Ethiopia			
Ethiopia to Get Second Exploratory Test	June	281	
Henry Ozanne			
Ethiopia	July 15	196	
Europe			
ECA's Oil Outlay for 1951—\$700 Million	Apr.	246	
Oil Consumption Continues Rise in Marshall Plan Nations	May	242	
Central Europe Faces Petroleum Decline	July 1	220	
Far East			
A Business Man Views the Far East	Oct.	225	
James Herrick			
France			
Alsatian Discovery Indicates 560 Barrel Daily Production	Feb. 1	216	
Dunkirk Refinery Producing First Products Since War	May	242	
ECA to Finance Drilling in France and North Africa	July 1	224	
France	July 15	166	
Germany			
Emsland Continues As Most Promising Area in Germany	Jan.	224	
Western Germany's Output Up	Feb. 1	200	
1949—A Successful Year for Exploration in Germany	Apr.	239	
German Pipe Line Firm Formed to Build Emsland Carrier	Apr.	234	
Germany	July 15	175	
Western Germany Produces Shale Oil from Meassel Mine	Aug.	244	
Germany's Oil Men Request Improved Economic Setup	Oct.	242	
Great Britain			
Britain Falls to Appease U. S. With Dollar			
Oil Compromise	Mar.	220	
Henry Ozanne			
Coryton, England, Refinery Planned by Vacuum Company	May	240	
U. S. Firms in Deal With British to Trade in Sterling			
Oil Areas	July 1	222	
Great Britain	July 15	179	
Hungary			
Hungary	July 15	182	
India			
Burmah Oil Schedules Test in Upper Assam Jungles	Mar.	222	
India Seeks New Production	Sept.	278	
Iran (See Persia)			
Iran	July 15	203	
Iraq			
Iraq Big-Inch Contract Awarded	July 1	210	
Iraq	July 15	211	
Iraq Wants New Oil Pact	Aug.	246	
Iraq and IPC Agree on Increased Oil Royalty	Oct.	226	
Israel			
Consolidated Refineries Israeli Operations Delayed	Jan.	218	
Insufficient Crude Oil Causes Shut-Down of Haifa			
Refinery	Feb. 1	210	
Negotiations Are Under Way to Build Refinery at Haifa	Aug.	252	
Italy			
Italian Oil Company Plans Modernization of Refineries	Jan.	218	
Italy	July 15	166	
Exploration in Italy Extending Into Central and			
Southern Areas	Sept.	276	
Japan			
Japan Purchasing Heavily from Sterling Sources	Mar.	222	
Japanese Refinery Resumes Operation With Imported Oil	May	240	
Japan	July 15	214	
Kuwait			
Kuwait-Saudi Arabia Area Structural Test Completed	Mar.	224	
Kuwait	July 15	214	

Maps

Algeria and Morocco	July 15	202
Argentina—Comodoro Rivadavia Fields and Concessions	July 15	106
Argentina—Mendoza and Neuquen (Plaza Huincul) Fields and Concession	July 15	103
Argentina—Salta Fields and Concessions	July 15	111
Austria and Czechoslovakia—Vienna Basin Field	July 15	164
Bahrain	July 15	220
Bolivia	July 15	114
Borneo—Brunel—Sarawak	July 15	235
Brazil	July 15	119
Canada—Alberta	Dec.	225
Canada—Central Alberta Fields	July 15	74
Canada—Ontario and District of Mackenzie Fields	July 15	66
Canada—Southern Alberta Fields	July 15	71
Chile	July 15	122
Colombia	July 15	127
Czechoslovakia and Austria—Vienna Basin Fields	July 15	164
Ecuador—Santa Elena Fields and Concessions	July 15	132
Egypt	July 15	198
France	July 15	169
Germany—Hanover Fields	July 15	172
Germany and The Netherlands—Border, Hamburg and Heide Fields	July 15	177
Great Britain	July 15	180
Hungary	July 15	185
Italy	July 15	188
Java—Ceram—Netherlands New Guinea	July 15	238
Japan	July 15	228
Kuwait	July 15	217
Iran—see Persia		
Iraq	July 15	212
Mexico—Northeastern and Isthmus Fields	July 15	87
Mexico—Panuco and Golden Lane Fields	July 15	90
Middle East—Concessions	July 15	204
Morocco and Algeria	July 15	202
Netherlands and Germany—Border, Hamburg and Heide Fields	July 15	177
Persia—Iran	July 15	209
Peru	July 15	137
Qatar	July 15	220
Saudi Arabia—Bahrain—Qatar	July 15	220
Sumatra—Southern Oil Area	July 15	246
Sumatra—Northern and Central Oil Areas	July 15	242
Texas—West	Sept.	1950
Texas—Louisiana Gulf Oil Fields (Insert)	June	1950
Trinidad	July 15	99
Venezuela—Southwestern Fields	July 15	156
Venezuela—Central Fields	July 15	140
Venezuela—Northwestern Fields	July 15	153
Venezuela—Eastern Fields	July 15	145
Venezuela—Eastern Fields	July 15	148
Mexico		
Success Promised in First Foreign Venture by CIMA	Jan.	224
Deep Discoveries Increase Mexico's Oil Reserves	Mar.	225
J. L. Cumming		
Pemex Plans Barter Pacts	Mar.	235
Work Under Way on 155-Mile Tehuantepec Products Line	Apr.	260
Mexico's Salamanca Refinery Goes Into Operation Soon	May	242
Mexico's Increasing Oil Consumption; Intensifies Supply Problems	July 1	208
Mexico	July 15	84
Pemex Announces Increase in Production and Drilling	Aug.	246
New Pipe Line, Tankers Move Pemex Petroleum	Oct.	229
Mexico Heads for Drilling Record	Nov.	304
J. J. Slattery		
Middle East		
Middle East Output Nears 1.5 Million Barrels Daily	Mar.	229
Middle East Summary	July 15	203
Morocco		
Morocco	July 15	197
Netherlands		
Schoonebeek—Landscape Oil Field	Feb. 1	210
Exploratory Drilling Planned in North Holland This Year	May	240
Netherlands	July 15	190
Neutral Zone		
Neutral Zone	July 15	214
Second Neutral Zone	Aug.	246
New Zealand		
New Zealand	July 15	248
Pakistan		
Burmah Oil Abandons Deep Wildcat in Sind Province	Apr.	249
Pakistan	July 15	230
Pakistan Opens to American Oil Men	Aug.	238
Foreign Firms Issued Invitation by Pakistan	Oct.	240
Paraguay		
Paraguayan Chaco Activities Abandoned by Union Oil	May	240
Paraguay	July 15	139
Persia (Iran)		
Iranian Government Company Would Bar Competition	Mar.	224
Persian Gulf		
Way Open for Drilling in Persian Gulf	Sept.	276
Peru		
Proposed Oil Law Revisions Will Aid Operators in Peru	Jan.	221
Expected New Oil Law May Stimulate Activity in Peru	July 1	224
Peru	July 15	139

Philippines

Oil Possibilities in the Philippines	Mar.	207
Juan S. Teves		
Philippine Islands	July 15	233
Poland		
Poland	July 15	190
Qatar		
Qatar Becomes An Exporter	Apr.	230
Qatar	July 15	222
Superior's Qatar Concession Boundaries Are Clarified	Aug.	246
Roumania		
Roumanian Production Fails to Reach Planned Levels	Jan.	220
Roumania	July 15	190
Saudi Arabia		
Utilized Drilling Rigs in Saudi Arabia	Jan.	208
D. J. Sullivan—F. A. Hilton		
Oil's Oasis in Saudi Arabia	May	236
Aramco on Soft Currency Basis to Reduce Dollar Cost of Oil	May	240
Saudi Arabia Crude Output Drops 17 Percent in Month	May	242
Saudi Arabia—Bahrain	July 15	222
Saudi Arabia Production Gains Are Up 15 Percent Over 1949	Aug.	248
Saudi Arabia Output for August Tops 18 Million	Oct.	242
Talks With British Open Way for Aramco to Make Use of Sterling	Oct.	242
Tapline Completed	Oct.	285
Henry Ozanne		
Sicily		
Gulf-Sicilian Pact Arouses New Interest in Oil Concessions	Sept.	274
Spain		
Spain's Oil Possibilities	Feb. 1	197
P. H. Sampelayo		
Trinidad		
Trinidad Utilizes Waste Gas for Pumping Power	Nov.	30
Turkey		
Turkey	July 15	225
The Undeveloped Oil Reserves of Turkey	Sept.	261
United States		
United States	July 15	92
U.S.S.R.		
Russia Claims Baku Field Is Growing in Prominence	Jan.	224
USSR Concentrates Operations in Matzen Area of Austria	Mar.	222
USSR	July 15	192
Russia May Try Again for Middle East Oil	Sept.	263
Mark Olson		
Venezuela		
Phillips Spending \$10 Million in Eastern Activity	Jan.	222
Venezuela Production Gains After Slump Early in Year	Jan.	224
Creole's Refinery Nearing Completion at Amuay Bay	Mar.	226
U. S. Firms Cut Production in Venezuela	Apr.	234
Henry Ozanne		
Right-of-Way Being Cleared for Pipe Line to Caracas	Apr.	238
Venezuelan Spokesman Takes Optimistic View of Future	May	242
Venezuela Production Soars As World Markets Loosen	July 1	218
Venezuela	July 15	142
Corrosion Control in the Lake Maracaibo Oil Fields	Aug.	229
J. H. Sauner		
Venezuelan Crude Production Rate Continues to Increase	Aug.	252
Venezuela Trade Mission On Buying Tour of U. S.	Oct.	238
Venezuela's Production Declines During July	Oct.	236
Petroleum History of Eastern Venezuela	Nov.	288
E. E. Barberil		
World		
World Crude Production 1 Percent Short of 1948 Record	Feb. 15	195
World Refinery Runs Approach 9 Million Barrels Daily Average in Mid-1949	Feb. 15	211
Venezuela Leads in International Movement of Crude	Feb. 15	210
World Development Enters New Phase	Feb. 15	213
Rates from Middle East, Venezuela—Transportation	Feb. 15	218
World—Streamlined Core-Handling	May	232
Gilbert M. Wilson		
World—Companies—		
Principal Oil Companies Outside U. S.	July 15	58
World Completions and Footage	July 15	47
World Conversion Factors	July 15	62
World Crude Production	July 15	41
World Petroleum Demand and Supply	July 15	39
World Producing Wells	July 15	52
World Refining	July 15	56
Shell Oil Company Reports on 1949 Worldwide Operations	Aug.	246
U. S. Firms Resist ECA Price Cut Aims	Sept.	280
Henry Ozanne		
ECA Ruling Brings Foreign Price Structure to Brink of Collapse	Oct.	230
ECA and Caltex Dispute Sale of Oil to China	Oct.	230
Yugoslavia		
Yugoslavia	July 15	194

AUTHORS' INDEX

A	
ABERNATHY, JACK H.	
A Contractor Figures His Costs	Dec. 125
ADKISSON, J. F. JR.	
Flooding Increase Unit Output from 34 to 1600 Barrels Oil Per Day	Nov. 177
AGNICH, FRED J.	
Primary Seismic Evidence of Limestone Pools	Sept. 83
ALCOCK, DR. E. D.	
Prospecting for Reefs with the Seismograph	Apr. 74
ANDERSON, LOWELL, E.	
Flow Conditions in Large Diameter Crude Lines	Oct. 197
AUXIER, G. W.	
Significance of Canada's Oil Resources	Dec. 271
B	
BAKER, HINES H.	
Tidelands Decision Imperils States Rights	July 1 44
BAKER, WARREN L.	
Industry Can Improve Position	Jan. 22
Gasoline Oversupply Only Disturbing Factor in Industry's Present Outlook	Feb. 1 22
Taxation and Stagnation	Apr. 21
Stocks Improve But Markets Weaken	Apr. 22
Industry's Outlook Improved	May 24
"Don't Expect Joe To Do It"	May 21
Outlook Best in Two Years	June 24
Prospects Continue to Improve	July 1 24
The People Responsible	July 1 21
Suspicious Multiply	July 1 21
Compacency Isn't Good	Aug. 37
Greater Production Necessary	Aug. 40
Oil Supply Demands on Steel	Sept. 39
Peak Operations Lie Ahead	Sept. 42
Mobilize Managerial Skill	Oct. 37
Oil's Winter Position Strong	Oct. 40
Sharp Growth Boosts Pumping Equipment Sales	Oct. 178
Non-Voters Create Bad Government	Nov. 39
Slower Consumption Growth Likely	Nov. 42
End-Use Control Is Dictatorship	Nov. 39
Supply-Demand in Favorable Balance	Dec. 41
BALTER, B. M.	
Electronics Applied to Oil Exploration	July 1 72
BARBERII, E. E.	
Petroleum History of Eastern Venezuela	Nov. 288
BARTLEY, J. H.	
Prospective Pennsylvanian Reef and Non-Reef Areas of West Texas	Sept. 73
BARTON, COL. T. H.	
An Independent Looks at Today's Oil Economy	Dec. 85
BATTLE, JACK L.	
Lime-Base Muds	Apr. 101
BAUGH, JAMES E.	
Reservoir Data on the Redwater Field	Dec. 260
BARBER, R. C.	
Porosity-Permeability Check by Electric Log	Aug. 165
BARRY, ARTHUR F.	
Low Temperature Separation Increases Recovery of Condensate from Natural Gas	June 203
BATES, W. F.	
Use of Tubing as Drill Pipe	Aug. 105
BEACH, H. N.	
Geology and the Petroleum Engineer with Special Reference to Western Canada	Dec. 250
BEAL, CARLTON	
Empirical Method of Measuring Oil Pool Performance	Nov. 168
BEESON, DR. CARROL M.	
Well Completion Practices Part III—Well Washing	Jan. 88
Part IV—Remedial Work	Feb. 1 104
BIELSTEIN, W. J.	
Factors Affecting Penetration Rate of Rock Bits Part I	May 89
Part II	June 171
BILLINGSLEY, HAROLD R.	
Sholem Alechem Pool Presents Complex Geological Picture	Feb. 1 61
BILLINGSLEY, J. E.	
West Virginia Faces Serious Stripper Problems	Jan. 54
BLACK, W. W.	
You'll Love That Crawler Tractor	Mar. 188
BLAIR, DR. CHARLES M. JR.	
Organic Corrosion Preventive	Nov. 159
BLISS, JACK E.	
Core Analysis Technique for Limestone and Dolomite Sept.	204
BLOHM, C. L.	
Purification and Dehydration of Gases	June 253
BOATMAN, JOHN A.	
Care of Gas Drilling Engines	Apr. 110
Care of Diesel Drilling Engines	Oct. 113
BOND, R. K.	
Radioactive Tracers in Products Handling	Nov. 208
BOWERS, NORMAN	
Nondestructive Testing of Drill Pipe	July 1 87
BOX, W. T.	
The Jet Perforation Process	Mar. 112
BOYER, RALPH L.	
Supercharged Four-Cycle Gas Engine	Nov. 230
BRANIFF, LAWRENCE W.	
Explosives for Seismograph Prospecting	Dec. 73
BRIGGS, FRANK	
A Model Design of a New Type Drilling Barge	Feb. 1 108
BROOKS, C. C.	
Low Cost Evaluation of Small Lease Blocks By the Seismograph	Apr. 82
BUCHAN, R. C.	
Dehydration of Natural Gas	May 148
BUFFINGTON, E. C.	
Drilling Mud Problems in Western Canada	July 1 203
BUSH, ROY R.	
Maintenance and Operation of Plug Valves	Oct. 210

C	
CAMPBELL, ORTON E.	
The Four Types of Petroleum Hydrocarbon Curves In Drill Holes	Jan. 72
CANNON, GEORGE	
Factors Affecting Penetration Rate of Rock Bits Part I	May 89
Part II	June 171
CARROLL, ALTON J.	
Corrosion Control in the Cotton Valley Field	May 141
CASE, L. C.	
Minimizing Red Water Troubles	July 1 152
CASWELL, C. A.	
Sitting on a Well	Feb. 1 100
Stratigraphic Prospects in Southwestern Oklahoma	Aug. 73
CATTELL, R. A.	
Hellum . . . and Its Uses	Dec. 65
CECIL, LAWRENCE K.	
Injection Water Treating Problems	Aug. 176
CHANEY, PRESTON E.	
Lime-Base Muds	Apr. 101
Abnormal Pressures and Lost Circulation	Apr. 113
CHAPIN, W. F.	
Purification and Dehydration of Gases	June 253
CHASE, J. L.	
Offshore Exploration by Core Drilling	Aug. 129
CLAIR, JOSEPH R.	
Lithologic Criteria of Arbuckle in Western Kansas	Dec. 83
CLONINGER, JAMES S.	
How Deep Oil or Gas May Be Expected	May 57
COLLINS, C. P.	
New Whipstock Technique for Hard Rock Drilling	Aug. 114
COOK, F. V.	
Checking Crankshafts	May 195
Crankcase Explosions	Nov. 213
COSTE, L. A.	
Radio Serves Big Line in Southern Canada	Apr. 225
COULTER, JOHN B. JR.	
Drill Collar Preventive Maintenance in the Permian Basin	Sept. 132
COX, BEN B.	
Influence of Clay in Oil Production	Dec. 174
COZZENS, F. R.	
Selective Pressures Release Bypassed Oil	Feb. 1 159
Shot Pattern Effect on Rock Reactions	May 177
Effect of Well-Plugging Techniques	Oct. 167
Fracture Sludge—A Basic Factor in Sand Plugging	Nov. 126
CRAIG, ERIC K.	
Structures of the Northwest Basin in Western Australia	Mar. 210
CRUMP, L. W.	
Dual Fuel Engine Development	Feb. 1 180
CUMMING, JORGE L.	
Deep Discoveries Increase Mexico's Oil Reserves	Mar. 225
CURRAN, B. E.	
Replaceable End Drill Collars—Part II—Conclusion	Jan. 104
D	
DALY, JOHN	
Benefits Derived from Cooperative Well Velocity Surveys	Nov. 91
DEELY, C.	
Relative Economics of Diamond Coring and Drilling	May 83
DENZLER, H. E. JR.	
Installation of Offshore Flow Lines	Feb. 1 127
DOREMUS, GORDON L.	
Cathodic Protection of Line	Nov. 206
DOUDS, W. E.	
Care and Maintenance of Electric Motors	Mar. 186
DUDLEY, RAY L.	
Oh Lord, I am Thankful	Jan. 21
Industry Can Improve Position	Jan. 22
Can a Pension Be a Racket?	Feb. 1 21
Gasoline Oversupply Only Disturbing Factor in Industry's Present Outlook	Feb. 1 22
International Complications Darken Present Oil Outlook	Mar. 22
Stocks Improve But Markets Weaken	Apr. 22
Industry's Outlook Improved	May 24
Outlook Best in Two Years	June 24
Prospects Continue to Improve	July 1 24
Greater Production Necessary	Aug. 40
Peak Operations Lie Ahead	Sept. 42
Oil's Winter Position Strong	Oct. 40
Slower Consumption Growth Likely	Nov. 42
Supply-Demand in Favorable Balance	Dec. 41
DUNN, O. C. JR.	
Electric Heater Cuts Paraffin	Dec. 152
E	
EARLOUGHER, R. C.	
Secondary Recovery Evaluation	Apr. 159
EDSON, FANNY CARTER	
Lithologic Criteria of Arbuckle in Western Kansas	Dec. 83
ELLIS, JR. (DICK)	
"Stop That Drip"	July 1 175
ERREBO, BURNS H.	
Condemnation of Depleted Reservoirs for Gas Storage	Oct. 65
EVANS, OREN F.	
Internal Structure of Shoestring Sands	July 1 66
F	
FARLEY, R. C.	
Hurricane Damage to Drilling Platform	Mar. 85
FERRIS, BERNARD J.	
Are Oil Shales Natural Source Beds of Petroleum? Part I	Aug. 80
Part II (Conclusion)	Oct. 85
FITZGERALD, GERALD	
Modern Mapping Methods	Mar. 69

FLETCHER, C. D.

Gas Lift—Principles and Practice

Part I	July 1	157
Part II	Aug.	182
Part III	Sept.	217
Part IV (Conclusion)	Oct.	165

FLORENCE, FRED F.Financing Oil Properties

Feb. 1	52
--------	----

FRANZOLINO, A. L.

Supervisory Training in the Drilling Industry

Dec.	99
------	----

FREDERBERGER, J. R.

Work Simplification Procedure

June	52
------	----

G

GARDINER, JOHN T.

Use of Shaped Charge Process for Open Hole Shooting

Aug.	99
------	----

GEORGE, WILLIAM O.

The Salt Water Problem in Texas

Feb. 1	56
--------	----

GIBBON, ANTHONY

Water Conditioning Study

Jan.	148
------	-----

Foundation Stabilization Whips Quicksand Problem

May	193
-----	-----

Experts Discuss Water-Flood Problems

June	235
------	-----

Edmonton-Great Lakes Pipe Line Under Construction

Aug.	240
------	-----

Concrete-Coated Pipe for Swampy Terrain

Nov.	247
------	-----

Developments in Oil Well Explosives

Nov.	121
------	-----

Canada's "Big-Inch" Now Operating

Dec.	195
------	-----

GLENN, A. H.

Gulf Coast Hurricane Design Data

Dec.	101
------	-----

GOOCH, LT. COMDR. F.

Interpretation of Field Data on the Basis of Relative Permeability Ratios

Jan.	135
------	-----

GRANT, ARTHUR F.

Spare-Time Courses Benefit Employees and Company

Nov.	65
------	----

GREER, WALTON J.

A New System of Electric Logging

Oct.	119
------	-----

GROSSMAN, WALDO

Air Entrainment During Primary Cement Jobs

Jan.	110
------	-----

H

HAIGH, BERTE R.

Prospective Pennsylvanian Reef and Non-Reef Areas of West Texas

Sept.	73
-------	----

HAGGARD, W. T.

Kilowatt Hours and Cubic Feet by the Billion

Feb. 1	169
--------	-----

HANSEN, HILMAN A.

Offshore Structure for Irregular, Shelving Bottom

July 1	94
--------	----

HARRISON, J. M.

Structural Features of the Canadian Shield

Feb. 1	202
--------	-----

HARVEY, WILLIAM P.

Primary Seismic Evidence of Limestone Reefs

Sept.	83
-------	----

HELLUMS, EARLE E.

Swift Progress Made in New Drilling Methods and Equipment

Feb. 15	83
---------	----

HERRICK, JAMES

A Business Man Views The Far East

Oct.	225
------	-----

HESSIN, W. A.

Multiple Packing of Input Wells

Aug.	151
------	-----

HICKS, TYLER G.

Drilling Rig Belt Drives

Jan.	99
------	----

Engine Driven Centrifugal Pump Calculations

May	169
-----	-----

HILL, ARTHUR M.

Tapping Pipe Lines Under Pressure

Feb. 1	176
--------	-----

HILTON, F. A.

Unitized Drilling Rigs in Saudi Arabia

Jan.	208
------	-----

HINES, LEO E.

The Cranfield Cycling-Pressure Maintenance Unit

Part I —Basis of the Unitization Agreement	Feb. 1	131
--	--------	-----

Part II —General Operational Plan	Mar.	139
---	------	-----

Part III—(Conclusion) Gas Well Flow Rates From Electric Models	Apr.	174
--	------	-----

HORN, A. J.

Well Blowouts in California Drilling

Part I	Oct.	99
--------------	------	----

Part II (Conclusion)	Nov.	132
----------------------------	------	-----

HORNER, V. V.

Drilling Mud Problems in Western Canada

July 1	203
--------	-----

HOWELL, R. P.

Radioactive Tracers in Products Handling

Nov.	208
------	-----

HOWER, WAYNE F.

Sand Consolidation with Resins

May	96
-----	----

HUGHES, GLEN D.

Advance Preparation for a Casing Job

Mar.	97
------	----

J

JACOBSON, HERMAN A.

Practical Aspects of Orifice Meter Calculations

Jan.	177
------	-----

JENNINGS, B. BREWSTER

International Trade is Vital to U. S. Oil Economy

Aug.	58
------	----

JEWETT, DR. JOHN MARK

Oil Prospects in Eastern Kansas

May	64
-----	----

JONES, JACK WEIR

Magnetic Scraper Locator

Oct.	202
------	-----

JONES, OGDEN S.

Stream Analyses Locate Oil Field Pollution Sources

Feb. 1	148
--------	-----

JONES, PARK J.

A Uniform Plan for Applying Oil Conservation Laws

Within a State	Feb. 1	42
----------------------	--------	----

A Uniform Plan for Applying Gas Conservation Laws Within a State	June	45
--	------	----

JONES, DR. WALTER B.

Oil and Gas Progress and Prospects in Alabama

July 1	57
--------	----

JOHNSON, JAMES H.

Oil Industry Insurance Problems

Jan.	46
------	----

JOHNSON, KEITH W.

Expanding Markets Increase Value of Natural Gas Reserves

Aug.	63
------	----

JOHNSTON, NORRIS

Evaluation of Zonal Damage

Dec.	156
------	-----

K

KASTROP, J. E.

Curbing Texas Gas Exports is Unsound Proposal

Jan.	40
------	----

Humble's Block Deflector Speeds Trip Time

Jan.	83
------	----

Plastics Combat Wellhead Corrosion in Galveston Bay Fields

Apr.	162
------	-----

Cuba's Oil Outlook

May	219
-----	-----

56 Years of Gulf Coast Oil

June	58
------	----

Jacket-Type Piling Structure Speeds Marsh Drilling

June	162
------	-----

Dual Rig Platform Reduces Offshore Drilling Costs

June	149
------	-----

Selective Acidizing in the Permian Basin

Sept.	116
-------	-----

KEENER, H. N.

Drill Pipe Tool Joints

Mar.	94
------	----

KEPLINGER, C. H.

The New Reef Fields of Texas

Sept.	181
-------	-----

KINGSTON, BENSON M.

Permeability Surveying and Controlled Acidizing

Oct.	164
------	-----

KLEMME, D. A.

Safety in Color

Nov.	115
------	-----

KRAUS, A. F.

Measurement and Control of High Pressure Gas

Aug.	205
------	-----

KREBS, JAMES O.

How to Save, Reclaim Mercury

Feb. 1	158
--------	-----

Field Testing and Servicing of Indicating Pressure Gauges

Oct.	183
------	-----

KUBISTA, W. R.

Underground Storage of Natural Gas

Aug.	212
------	-----

L

LA ROCK, T. B.

Slack Loop Practice in Lowering-in-Procedure

Nov.	220
------	-----

LANG, BERNARD

Gammatron Surveys

Nov.	86
------	----

LANGSTON, J. F.

Diamond Coring in Western Canada

Dec.	266
------	-----

LASKY, BERNARD H.

Surface Minerals Reflect Subsurface Structure in New Exploration Technique

Oct.	73
------	----

LILLIE, SYLVIA

Pipe Line Construction—June-271; July 1-193; Sept.-251; Nov.-268; Dec.-211

LOCKE, L. C.

Core Analysis Technique for Limestone and Dolomite

Sept.	204
-------	-----

LOGAN, L. J.

Curbing Texas Gas Exports is Unsound Proposal

Jan.	40
------	----

Petroleum Demand to Show Increase in 1950

Feb. 15	29
---------	----

Reserves at New Highs

Apr.	48
------	----

Outlook for Demand Brighter

May	39
-----	----

Larger Companies Produce 62 Percent and Refine 86 Percent of U. S. Oil

June	44
------	----

Compromise on Imports Essential

July 1	40
--------	----

In Fighting Communism Abroad Let Us Not Embrace It At Home

Aug.	39
------	----

Satisfactory Half Year Results from Peak Demand

Aug.	61
------	----

Permian Basin Symbolic of American Enterprise

Sept.	57
-------	----

Deeper Pays Provide More Sweet Crude in Permian Basin

Sept.	60
-------	----

Steel Scarcity Threatens Oil and Gas Industries

Nov.	50
------	----

Oil Demand Rising Less Sharply

Nov.	70
------	----

Oil Now \$32 Billion Industry

Dec.	56
------	----

LORENZ, EMIL PAUL

The Undeveloped Oil Reserves of Turkey

Sept.	261
-------	-----

M

MANN, ROBERT

Radio Wave Prospecting for Structure

Nov.	92
------	----

MASEY, WILLIAM P.

Gas Lifting Deep Wells in the Permian Basin

Sept.	190
-------	-----

MASSON, DAVID J.

Results in Experiments with Pulsation Eliminators

June	264
------	-----

MEIKLEJOHN, R. F.

The Jet Perforation Process

Mar.	112
------	-----

MENAU, PAUL L.

Mitigation of Oil Field Corrosion

Jan.	152
------	-----

MENZIE, D. E.

The Mechanism of Air-Gas Drive

June	212
------	-----

The Mechanism of Air-Gas Drive

July 1	147
--------	-----

MESSERSMITH, ARTHUR H.</

N

NIELSEN, R. F.
 The Mechanism of Air-Gas Drive
 Part I June 212
 Part II (Conclusion) July 1 147

NIGRA, JOHN O.
 The Junior College Graduates Oil Technicians.....Nov. 60

O

OBERG, C. H.
 The Balanced Rotary Rig July 1 109

OLSON, MARK
 Moving Day on the Gulf Coast June 159
 Russia May Try Again for Middle East Oil Sept. 263

OSBORN, W. M.
 Scurry County Stimulates Search for Reefs.....Apr. 40

OZANNE, HENRY
 Britain Falls to Appease U. S. with
 Dollar Oil Compromise Mar. 220
 U. S. Firms Cut Production in Venezuela Apr. 234
 U. S. Firms to Enter Tunisia May 228
 Ethiopia to Get Second Exploratory Test..... June 281
 Free Enterprise System—An Interview with
 Robert G. Dunlop June 40
 Heating Oil Use To Grow Despite Natural Gas..... July 1 54
 Federal-State Dispute Slows Continental
 Shelf Development Sept. 48

P

PAINE, C. J.
 Rig-to-Office Communication May 104

PARKER, MARSHALL E.
 Determination of Current Requirements for
 Cathodic Protection Nov. 253

PARKS, ASBURY S.
 Low Temperature Separation Increases Recovery of
 Condensate from Natural Gas June 203

PARTEN, J. R.
 Petroleum Defense Agency is Designed to Protect
 Industry's Free Competition Nov. 59

PEGUES, H. G.
 Two-Way Radio Speeds Operations Apr. 199

PEMBERTON, J. R.
 Offshore Structure for Irregular, Shelving Bottom..... July 1 94

PETERSEN, T. S.
 Antitrust Suit Victory for Government Would
 Endanger West Coast Operations Nov. 58

PETERSON, EARL T.
 The Ardmore Basin—Geology and Oil Possibilities... Mar. 57

POWELL, J. I.
 Safety Training by Specific Practice Problems
 Part I —Drilling Rig Safety—Rotary Tongs.... Apr. 114
 Part II —Drilling Rig Safety—Pipe Handling
 Through V-Door, on Catwalk and Across..... May 111
 Part III—Drilling Rig Safety—Pipe Slips
 and Elevators June 180
 Part IV —Drilling Rig—Pipe Stabbing, Racking
 and Spinning Practice July 1 103
 Part V —The Driller's Responsibility in
 Accident Prevention Aug. 122
 Part VI —Derrick Structure Practices Sept. 152
 Part VII—Fluid Pressure Hazards in Rotary
 Drilling Operations Oct. 128

POWERS, WALTER D.
 Slaughter Field Problems Increase Operating Costs.. Sept. 209

FRANGE, F. A.
 Corrosion in Water-Flood Operations Apr. 157

PRESCOTT, B. OSBORNE
 A Cross-Section Board Jan. 69

Q

QUAYLE, ALEX
 Tapered Sucker Rod Strings Nov. 186

R

RAHMES, M. H.
 North Cowden Field Gas Injection Project..... Oct. 153

RALL, CLEO GRIFFITH
 Measuring Porosity of Oil Field Cores Mar. 157

REA, HENRY CARTER
 "Strat Trap" Search Need Shown by Wyoming Basin.. Nov. 75

REDMAN, W. J.
 Care and Maintenance of Slush Pumps Dec. 118

REESE, AL
 Industry and the Dead Hand of FPC July 1 46

REMKE, MARVIN A.
 Larimore Gas Injection Project May 164

RILEY, MAX L.
 Operating and Design Features of Adsorption-Type
 Dehydrators Jan. 184

ROBINSON, VERNE
 Observations on Oil and Gas Leases Jan. 48

ROHRMAN, F. A.
 A Bibliography on Cathodic Protection July 1 179

RUSSELL, GEORGE VERNON
 Planned Oil Field Building to Reduce Costs Oct. 57

S

SAUNDERS, K. D.
 Thermal Stresses Around an Uncased Hole—Part I.. Dec. 167

SAMPELAYO, P. H.
 Spain's Oil Possibilities Feb. 1 197

SCHABARUM, B. R.
 Drilling Practices in the Permian Basin Sept. 111

SCHMIDT, EUGENE
 Radio Wave Prospecting for Structure Nov. 92

SCOTT, JOHN W.
 Installation of Offshore Flow Lines Feb. 1 127

SHREWSBURY, RAYMOND D.
 Record Shows Poor Payout Below 12,000 Feet..... Mar. 48

SLATTERY, J. J.
 Mexico Heads for Drilling Record Nov. 302

SMITH, B. B.
 Surface Casing Failures Dec. 129

SMITH, CECIL W.
 November Production Gains for Fourth
 Straight Month Jan. 32
 December Refining Hike Improves Crude Stocks... Feb. 1 32
 3.7 Increase Made in Exploratory Drilling Feb. 15 57
 January Gasoline Stocks Near March 1949 Level.... Mar. 32
 Work Starts on \$90 Million Canadian Pipe Line.... Mar. 216
 Rise in Gasoline Stocks Slowed During February.... Apr. 32
 Exploration Leads 1949 Period May 73
 Gulf Coast Oil Fields June 60
 Petroleum Trends July 1 26
 Deeper Pays Provide More Sweet Crude in
 Permian Basin Sept. 60
 Permian Basin Dominates U. S. Drilling Activity... Sept. 72
 Permian Basin Pipe Lines Transport 1 Million
 Barrels Daily Sept. 235
 Petroleum Trends in the U. S. Oct. 42
 Oil Demand Rising Less Sharply Nov. 70
 Petroleum Trends in the U. S. Dec. 42

SMITH, J. E.
 Drill-Stem Testing in Open Hole Jan. 113

SQUIRES, FREDERICK
 Flooding Prospects of Illinois Basin Oil Sands..... Mar. 146

STAHL, C. D.
 Residual Water and Residual Oil by Capillary
 Pressure Technique Aug. 160

STAPLES, RAY
 Core Analysis Problems in Secondary Recovery..... Aug. 156

STEKOLL, M. H.
 Theory and Practice of Water-Flood Operations.... Jan. 153

STERRETT, ELTON
 19,889 Wells to Require Pumping Equipment..... Feb. 15 117
 38,331 New Wells in 1950 Is Drilling Forecast.... Feb. 15 75
 Power Rig Design for Deep Drilling Sept. 146
 New Short Line Speeds West Texas Crude..... Sept. 242
 Records Broken by Independent Wildcat Oct. 197
 Dry Rot Prevention in Piling Structures Oct. 180
 Deep Water Line—Design and Construction Nov. 199
 Compressor Station Automatic Shutdown Control... Nov. 243

STOUGHTON, R. A.
 Reef Surveying with Radioactivity Jan. 61

STOVER, JERRY
 Rig-to-Office Communication May 104

SULLIVAN, D. J.
 Unitized Drilling Rigs in Saudi Arabia Jan. 208

SWESNIK, ROBERT M.
 Stratigraphic Convergence Problems Apr. 57

T

TALIAFERRO, D.
 Measuring Porosity of Oil Field Cores Mar. 157

TAPER, WILFRED
 A New System of Electric Logging Oct. 119

TEVES, JUAN S.
 Oil Possibilities in the Philippines Mar. 207

THAGARD, W. T.
 Kilowatt Hours and Cubic Feet by the Billion.... Feb. 1 169

THRALLS, E. M.
 Low Cost Evaluation of Small Lease Blocks
 By the Seismograph Apr. 82

TILLERY, JAMES H.
 Secondary Recovery in Louisiana Nov. 155

TOPPING, A. D.
 Thermal Stresses Around an Uncased Hole—Part I.. Dec. 167

TULLY, ROBERT
 Percentage Depletion Mar. 40

V

VAN DYKE, ORLEN
 Oil Emulsion Drilling Mud Nov. 101

VAN GUNDY, CECIL
 Gas Flow-Chart—Calculation and Integration..... Apr. 206

VAN WINGEN, N.
 Injectivity Indices—Their Prediction and
 Determination Feb. 1 152
 Evaluation of Zonal Damage Dec. 156

W

WAGNER, H. J.
 Underground Storage of Natural Gas in the
 Appalachian Area Dec. 60

WALTER, R. B.
 Scale Deposit Prevention in Gas Lift Wells..... June 228

WANENMACHER, J. M.
 The New Reef Fields of Texas Sept. 181

WARNER, ROSS T.
 Accounting and Tax Problems in Canada..... July 1 211

WASEM, A. R.
 Photogeology Applied to Petroleum Exploration.... Apr. 64

WATSON, J. G.
 Drill Pipe Tool Joints Mar. 94

WATSON, MARSH S. JR.
 Interpretation of Field Data on the Basis of
 Relative Permeability Ratios Jan. 135

WEAVER, ELMER
 Gear Shift Start Cold Oil Feb. 1 174

WEINAUG, DR. CHARLES F.
 Effect of Reservoir Rock on Vapor-Liquid
 Equilibrium May 175

WEST, JAMES M.
 Installation of Offshore Flow Lines Feb. 1 127

WESTBROOK, JAMES H.			
Job Evaluation—1950 Model	May	45	
WHEELER, HENRY P. JR.			
Helium . . . and Its Uses	Dec.	64	
WHEELER, ROBERT R.			
Stratigraphic Convergence Problems	Apr.	57	
WILGUS, DR. W. L.			
The Elk City Pool	June	123	
WILSON, GILBERT M.			
Oak Creek Discovery	Jan.	65	
Helicopter and Portable Towers Simplify Gravity Surveys in Northern Alberta	Jan.	203	
Improved Techniques Reduces Well Pulling Costs....	Mar.	168	
Sliding Stand for Boiler Tube Cleaning	Apr.	108	
Laying Ten-Inch Submarine Pipe Line	Apr.	204	
Streamlined Core-Handling	May	232	
Monitoring Panel and Automatic Controls Improve Tank Farm Efficiency	Sept.	238	
Dog House Mounted on Collapsible Rack.....	Oct.	106	
Portable Unit to Service and Pump Rig Water Wells..	Nov.	124	
Portable Tank Farm for Gauging Wildcat Wells.....	Dec.	149	
WORTMAN, H. RAY			
Design of Heaters to Eliminate Freezing and Hydrate Formation	June	267	
Y			
YOUNG, F. S.			
Gas Heat Exchangers in Transmission Systems.....	May	200	
Z			
ZAUNER, JOHN H.			
Corrosion Control in the Lake Maracaibo Oil Fields..	Aug.	229	
ZOBELL, DR. CLAUDE E.			
Bacterial Activities and the Origin of Oil.....	June	128	
NOTE: Current Issues fifty cents (\$.50). Issues over one (1) year old, One Dollar (\$1.00) per copy—Special Issues, One Dollar (\$1.00)			
WORLD OIL IS PUBLISHED BY GULF PUBLISHING COMPANY 3301 Buffalo Drive (Post Office Box 2608) Houston 1, Texas.			

World Oil is published monthly by Gulf Publishing Company
3301 Buffalo Drive (Post Office Box 2608), Houston 1, Texas

